

MANUFACTURERS' RECORD.

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER.

VOL. XXVIII. No. 7.
WEEKLY.

BALTIMORE, SEPTEMBER 13, 1895.

\$4.00 A YEAR.
SINGLE COPIES, 10 CENTS.

Manufacturers' Record.

PUBLISHED EVERY FRIDAY BY THE
Manufacturers' Record Publishing Co.
MANUFACTURERS' RECORD BUILDING,
Lexington and North Streets,
BALTIMORE.

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NEW ENGLAND OFFICE—John Hancock
Building, 178 Devonshire St., Boston.
S. I. CARPENTER, Manager.

SPECIAL TRAVELING REPRESENTATIVES:
RICHARD S. EVANS,
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SUBSCRIPTION, - - - \$4.00 a Year.
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Trade for Southern Ports.

The Topeka (Kans.) Capital, in referring to the conference of Western States to be held October 1, 2 and 3 in that city to discuss the movement of more Western grain to the gulf ports, says:

The movement of 650,000,000 bushels of corn, now being gathered in Kansas, Nebraska, Oklahoma Territory, Colorado and Texas, without taking into account a similar amount in the line of States directly upon the east, should be sufficient to reawaken profound interest in saving the expense of the long haul to the Atlantic seaboard. The trade relations now existing between New York, English, French and German merchants with our immediate neighbors, Mexico and Central and South America, are the growth of generations. It is useless to disguise the fact that their hold upon this trade is almost impregnable. The shipbrokers and merchants, backed by the strong financial institutions of the trade centres named, actually own many of the growing crops. They own the ship lines that carry the trade. It is easy to see why they do business. The Central and South American trade wants relief, and can only secure that relief through more intimate relations with the western half of the United States. It is the opinion of those best acquainted with the subject that our Southern neighbors are at least willing to meet us half way.

However serious the situation may appear, it can be overcome by united action, but until that result is achieved the West and Southwest will both buy and sell their products at a disadvantage. Every railroad which reaches the gulf upon its own rails, or has traffic arrangements with other roads which enter one or more gulf ports, stands ready to help along this movement. It is needless to add that every port on the Gulf of Mexico is also anxious to handle the trade.

The Western States conference, to be held at Topeka, has been called to give this subject serious and earnest consideration, and, if possible, to present matters in such a light that capital can be organized upon a business basis to carry on this trade on natural lines, i. e., handle the products between buyer and seller on the very shortest route obtainable.

The MANUFACTURERS' RECORD takes pleasure in noting the continuous interest in this matter. The natural export points for the West are the Southern seaports. They are hundreds of miles nearer the producing section, have good railroad facilities, and no reason exists why they should not be the shipping points for this territory. At the South and West Grain Congress held at Mobile in 1894 this question was agitated, and the MANUFACTURERS' RECORD trusts that the Topeka conference will result in steps being taken to accomplish the desired result in the near future.

Cotton-Mill Building in the South.

In commenting upon a report in the last issue of the MANUFACTURERS' RECORD showing the activity in cotton-mill building in the South, the Petersburg Index-Appeal says:

If the MANUFACTURERS' RECORD is correctly informed, the tidy sum of \$15,000,000 will be invested in cotton-milling in the South within the next year or so. That investment means hundreds of thousands of dollars paid out annually to the workers in the mills. The figures may be exaggerated, but granting that they are too large by even 50 per cent., there can be no question that the manufacture of cotton will in time be almost exclusively confined to the South, and that this section must gain greatly by the establishment of new industries and the transferment of the mills of old companies to the cotton belt of the South.

If a few Southern papers would only carefully follow the facts which are presented in every issue of the MANUFACTURERS' RECORD, they would soon see that there is no possible excuse at any time for such an intimation as the Index-Appeal makes when it says: "The figures may be exaggerated, but granted that they are too large by even 50 per cent." This is a slur upon the correctness of these statements which is unworthy of the Index-Appeal, when it could have easily satisfied itself by an investigation as to what is actually being done. Instead of being too large, the figures are in reality considerably less than the aggregate of investments that are now being added to the South's cotton-mill interests. Taking as illustrations only a few of the more important mills which are now under construction with every dollar of the capital in hand for completion, all of which are being built by very strong companies, some composed of New England people and some being additions to mills now in operation and owned by Southern companies, the wonderful growth of this industry is emphasized. The Henrietta Mills, of North Carolina, are building a new mill to be equipped with 20,000 spindles; the Spartan Mill, at Spartanburg, S. C., a new mill for 30,000 spindles; the Massachusetts Cotton Mills Co., of Massachusetts, is building a 30,000-spindle mill at Rome, Ga.; the Whittier Cotton Mills, a 10,000-spindle mill at Atlanta; the Langley Manufacturing Co., a 12,000-spindle addition; the Richlands Mill Co., of Columbia, has completed a 10,000-spindle mill, and will add 10,000 spindles more; the Henderson Cotton Mills, Henderson, Ky., is making a 11,000-spindle addition; the Fulton Cotton Mills, at Atlanta, a 25,000-spindle addition; the Dwight Manufacturing Co., of Massachusetts, is building a 25,000 spindle mill at Alabama City, Ala.; the Clifton Manufacturing Co., of Clifton, S. C., is adding 18,000 spindles; the Pelzer Manufacturing Co. is erecting the largest single cotton-mill building in the South for 55,000 spindles; the Gaffney Manufacturing Co., of Gaffney, S. C., is adding be-

tween 30,000 and 40,000 spindles; the Exposition Cotton Mills, of Atlanta, 16,000 additional spindles; the Roanoke Mills Co., Weldon, N. C., is building a 12,000-spindle mill; Steele's Mill at Rockingham, a 10,000 spindle mill; the Aiken Manufacturing Co., Bath, S. C., a 20,000-spindle mill; the Poe Manufacturing Co., Greenville, S. C., a 10,000-spindle mill; Mr. Banks Holt, at Graham, an 8000-spindle mill; the Granby Mills at Columbia, a 30,000 spindle mill; the Mills Manufacturing Co., Greenville, a 10,000-spindle mill; the Odells, at Concord, a 3000-spindle mill; the Chatham Manufacturing Co., at Elkin, a 5000-spindle mill; the Midway Mills at Rockingham, a 3000-spindle mill; bricks are being made for a 5000 spindle mill at Blacksburg; a 46,000-spindle mill is being built at Union, S. C., by the Union Company, now running 13,000 spindles. This is simply a list of some of the more important mills whose financial standing is so well-known in the business world as to need no comment. The actual number of spindles in this brief list runs up to about 470,000, but this does not include one-third of the new mills, the others, however, being smaller than the average of these. The fact of the matter is that today over 100 mills are under construction in the Southern States, or their early building assured by the capital having been raised, ignoring entirely those which have not gone beyond this stage. These mills will run the total of spindles to over 800,000. One New England mill-engineering firm alone is superintending the putting in of over 300,000 spindles in the South. In 1890 the South had 1,712,000 spindles and an aggregate capital invested in cotton mills of \$61,100,000, or an average of \$35 a spindle. On this basis the 800,000 new spindles would represent \$28,000,000 and the 470,000 in the brief list enumerated would cost \$16,400,000. This average of \$35 a spindle is, however, too high for the present time, but even at \$20, which is too low, the 800,000 spindles would represent over \$16,000,000, and this too without taking any account of the many new mills now being organized, but not yet definitely assured, though doubtless a good proportion of them will soon be under construction.

THE success of the Young Men's Business League of Memphis in attracting manufacturing enterprises to that city and in advancing the general business interests of Memphis has commanded general attention throughout the country. Strange to say, this institution is, so the MANUFACTURERS' RECORD is informed, "composed chiefly of clerks and salaried men who are doing as much as they possibly can to aid in the work of building here a great manufacturing city." This is an excellent illustration

of the activity with which the young people of the South are pressing forward its industrial development. It should stimulate every business man in Memphis, as well as in every other city of the South, to give active and hearty co-operation to the work of organizations of this character in which the young men are seeking to advance the interests of their town.

How the South is Injured.

Several years ago the editor of the MANUFACTURERS' RECORD made a personal appeal to the managers of the press associations which furnish news to the daily papers of the country to give less attention to sensational items from the South and more to matters of business. It was pointed out that for years sensational trash without limit had been sent to Northern and Western papers, while matters of deep interest to the people of all sections had been ignored. Under such conditions every street brawl, every trifling row, which, if happening in other sections, would never have been heard of a mile away from where it occurred, was magnified into great prominence as a threatened race war or a street duel between leading citizens, instead of a street row between law-breaking, pistol-carrying bullies. Scarcely a dog-fight was permitted to pass without being used as the basis for a sensational dispatch North. By this means the South has been woefully misrepresented. The world has judged it by the news which it has sent North and West about itself, for most of this sensational stuff has been prepared by its own people—men ready to find a market wherever they could for all such misrepresentation of their section, and, of course, Northern and Western papers have taken what has been offered.

When these facts were presented to the press associations Hon. Patrick Walsh, manager of the Southern Associated Press, promptly seeing their importance, undertook to discourage this character of news and to encourage the gathering of news of more value. He has made a wonderful change for the better, and the MANUFACTURERS' RECORD rejoices at his good work. But as showing how this matter appears to impartial Northern papers the following editorial from the Worcester (Mass.) Spy is of interest. The Spy says:

One of the mysteries that puzzles Northern editors of telegraphic news is that the busy news gatherers in the South send over the wires many items of no interest to Northern readers, while omitting many others that they would be very glad to see. It is not that there is any lack of news of general or national interest in the South, for the papers published in its important towns teem with such items, but it is rather to be attributed to a lack of knowledge of Northern tastes and wishes. For years the Southern wires, presumably in the hands of Southern men, have told of murders, duels, hangings and burnings, of assaults and crimes against women, of the "brawls" of desperadoes and the "encounters" of gentlemen, and of every imaginable species of devilry, and all these with as much detail as

possible. The natural and inevitable consequence has been that the average reader who had no better source of information acquired an entirely wrong impression of Southern society, and looked upon that section as little better than the infernal region.

If those Southern news collectors and transmitters would but stop polluting the wires with this kind of stuff and would send in its stead other and pleasanter items, it would be greatly to their section's advantage.

Our exchanges from the gulf States of last Friday had a report wired from Birmingham, Ala., of an incident at the summer carnival of Camp Hardee, United Confederate Veterans. It was an account of the presentation of a fine silk United States flag by those veterans of the Confederacy to the George H. Thomas Post, Sons of Veterans. The report closed with the following paragraphs:

"The carnival was given by Camp Hardee for the purpose of raising funds to found a home for needy Confederate soldiers in this county, a movement looking to that end having been set on foot by Camp Hardee some time ago.

"The spirit of fraternity, charity and loyalty rules in today's carnival, the blue and the gray blending in one united effort for the alleviation of the suffering of the men who wore the gray and who are now in sore need."

Here was a story that should have been published in Northern papers last Friday morning. Had it been a shooting or a hanging scrape, it would certainly have been forwarded. This is but an instance of the many bright and beautiful things that are occurring in all parts of the South every day, and are noticed in its newspapers, but that are never wired to the outside press. If the news collectors and transmitters down South will insist on wiring detailed accounts of horrors and barbarities, they ought also to give the other and brighter side of Southern life as exemplified in its daily happenings.

A Suggestion from New England.

A heavy inflow of thrifty settlers will mean more to the South than can easily be comprehended without a careful study. It will mean an influx of new blood, new activities, new forces for development, an increase in land values, and out of it all more of the comforts and conveniences of advanced civilization, more and better schools, more churches and more avenues of profitable employment. Sparse population almost necessarily results in comparative stagnation, while the activities developed by thriving town and city growth result in mental, moral and financial advancement, which stimulates and benefits all the surrounding territory. Because of these facts the MANUFACTURERS' RECORD is persistently urging upon the South the importance of immigration. Commenting on this subject the Boston Journal of Commerce says:

We have endeavored in previous articles that have appeared in these columns to place before the world a few of the many splendid attractions which the South has to offer to those seeking investment for capital. These articles have not in any way been colored, neither have the facts been overdrawn. To state that the Southern States have resources for wealth that are not excelled by those of any other portion of the globe is not an overdrawn statement. History shows no parallel of a country so thoroughly devastated by war that has become so prosperous in so short a time. The raising and the manufacturing of cotton are now absorbing the principal interest of that section. This is wise and all right, yet there is another matter that the South should give consideration to, and which should be encouraged to the utmost extent, and that is the importance of devising schemes for the encouragement of immigrants to settle in its midst and devote their attention to agriculture. The trouble with the South at the present time is that the people there are land poor. The ownership consists of too large tracts. Not one-fifth of the land in the South is now in cultivation. The owners of these large tracts should endeavor to induce settlers to locate upon them and till them. The reason for the non-cultivation of this large part of their land is not because it is poor or sterile; this is certainly not the case; on the contrary, it is fertile and easy of cultivation. Let the tide of emigration be turned that way and in ten years their lands would double in value. What the South needs today is a class of industrious people that will till the soil, and she offers to such inducements fully equal, if not superior, to any portion of the West. Manufacturing is now so far advanced there that, in a short time at least, capital will seek investment there, for the reason that it can be profitably em-

ployed and good returns made upon it. The leading citizens of the different Southern States should take steps to increase the agricultural interests in their sections. By doing this they will be in the right direction to increase their wealth to an enormous extent.

The Growing Importance of Southern Cotton-Manufacturing.

The cotton crop of 1894-95 was 9,901,251 bales, the largest by 865,872 bales ever produced by the South. The yield and the value for four years was as follows:

	Bales.	Value.
1894-95.....	9,901,251	\$297,037,530
1893-94.....	7,549,817	253,118,137
1892-93.....	6,700,065	284,765,512
1891-92.....	9,035,379	338,826,712

Owing to the low price ruling during the year the value of the crop of 1894-95 was but little greater than the value of the crop of 1892-93, which was more than 3,000,000 bales smaller than last year.

A most interesting feature of the official report of the crop as published in this issue is the large increase in American mill takings, and especially the growth of consumption by Southern mills. The relative growth of the takings of cotton in Northern and Southern mills of late years in bales has been as follows:

Crop Years.	Northern mills.	Southern mills.
1894-95.....	2,083,839	862,838
1893-94.....	1,601,173	718,515
1892-93.....	1,687,286	741,348
1891-92.....	2,190,766	686,080
1890-91.....	2,027,362	604,661
1889-90.....	1,799,258	546,894
1888-89.....	1,785,979	479,781
1887-88.....	1,804,993	450,090
1886-87.....	1,710,080	401,452

Under the activity prevailing in cotton-manufacturing interests Northern mills regained most of the loss of the two preceding years, but their purchases were still 107,000 bales less than in 1891-92, while during the same period Southern mills increased their consumption 176,800 bales compared with 1891-92. The Commercial and Financial Chronicle distinguishes between the takings or purchases and the actual consumption, and makes the figures as follows:

Crop Years.	Actual consumption.	
	Northern mills.	Southern mills.
1889-90.....	1,800,000	519,478
1890-91.....	1,925,000	605,916
1891-92.....	2,025,000	681,471
1892-93.....	1,950,000	733,701
1893-94.....	1,675,000	723,319
1894-95.....	1,840,766	853,352

According to these figures the actual consumption in Northern mills, while larger, of course, than during the panic year 1893-94, was less than for any year since 1890-91, having been 85,000 bales smaller than in the latter year, and 185,000 bales smaller than in 1891-92. Southern mills, on the contrary, gained nearly 250,000 bales compared with 1890-91, and 172,000 bales compared with 1891-92. In 1890-91 the South consumed less than one-third as much cotton as Northern mills; last year Southern consumption was nearly one-half as much as Northern. Every year will now bring the two sections closer together in cotton consumption. Northern mills are not today, nor have they for two or three years, been adding enough new spindles to offset

the depreciation in machinery. It is estimated that, merely to hold its own, the North must add 300,000 new spindles a year to take the place of the steady depreciation which is constantly going on. This is not being done. In the South, on the contrary, the mills under construction, the additions now being made and such of the new projected mills as can safely be counted on to be built will add over 800,000 spindles to the South's mill interests. With a considerable part of this machinery going into operation during the next few months, the South can be set down for an actual consumption of over 1,000,000 bales in the crop year 1895-96. Northern mills will likely show no increase over the year just ended.

Mexican Prosperity.

The ever-enterprising MANUFACTURERS' RECORD, of Baltimore, publishes this week an interview signed by the President of the Mexican Republic, Porfirio Diaz, and specially prepared by him for that journal.

No better evidence could be given of the high standing of this journal, which has done so much to advance the material interests of all the Southern States, nor could the President of Mexico have selected a better medium through which to urge the advantages of closer commercial relations between Mexico and the United States.—New York Mercury.

The Cotton States Exposition.

The opening of the Cotton States Exposition during the present month will be not only a national and historic event, but an opening chapter in the new industrial and commercial era of Southern progress. Though originally designed to specially represent the resources and capabilities of the Cotton States, it has broadened in its designs, and includes in its circle the interests not only of the States that cluster around the Georgian gem, but of those beyond the national borders that fringe the gulf and debouch on the Pacific. It is in this related and radiating sense that the significance of the event is to be really rounded out and measured. Locally, if such a term can be used in regard to the empire sisterhood of the Southern States, the Atlanta exhibit of Southern products will not only be a positive surprise to many, but a very effective means of stimulating the incoming of both men and money. There is room in these warm and fruitful latitudes for a nation of home-makers, and resources of a rich and varied nature to keep the spindles of the future in perpetual hum, the pick of the miner busy and the forge and the furnace in constant activity.

It needs but an intelligent knowledge of these possibilities to open our Southern gateways to the immigration that in the West and North changed the wilderness into a garden, peopled the solitudes with a thriving and energetic race and made a magnificent empire of a group of seedling colonies. In a general sense and in the nature of a cause to a consequence, the commercial relationship of this country with those that straggle along the spine of the Andes and are as yet but the cradles of coming nations, will be definitely and permanently established. From this standpoint, in which there is nothing either visionary or unreasonable, the Atlanta Exposition will have a special place among those that have already passed into industrial and commercial history. Its success on these lines is assured, and it needs but the co-operation of the American public and their practical endorsement of the enterprise to complete its service both in national and international interests.—St. Louis Age of Steel.

STEEL-MAKING EXPERIMENTS.

Results at Birmingham Indicating What Is Possible—Brown Ores Suggested as Necessary.

[Special Correspondent, MANUFACTURERS' RECORD.]

BIRMINGHAM, ALA., September 9.

The recent announcement that the Tennessee Coal, Iron & Railway Co. has contracted to furnish 25,000 tons of special iron suitable for the manufacture of basic steel to the Carnegie Steel Co., at Pittsburgh, and a smaller quantity to the Illinois Steel Co., Chicago, and some other steel manufacturers in the North, has revived the question of steel-making in the South to such a degree that Birmingham has become a point which the Northern iron and steel manufacturers are watching with anxious interest. The cheapness with which pig iron is produced here has been only too clearly shown in the past three years. It has been claimed that the furnaces were selling for less than cost, but to anyone familiar with the condition prevailing such a claim is absurd in the extreme. Let me ask—Is it possible for two large furnace companies, both so heavily mortgaged that they could well obtain any further loans, to operate for three years without obtaining such loans, to pay dividends accruing on their bonds, to make necessary repairs, enlargements, etc., to pay their labor, and now have sufficient funds in hand to carry on extensive improvements, and yet to have been operating all this time at an actual loss? Certainly it is impossible. It is a matter of fact which cannot be disputed, and is not by anyone familiar with the subject, that the Birmingham furnaces, and, indeed, all those operating in the South during the continued depression, now happily passed, have been making a margin of profit, small in most cases, to be sure, but still sufficient to enable them to pay current expenses, and in many cases lay aside enough for extensive and expensive improvements.

This is recognized only too clearly by the Northern iron and steel manufacturers, but, just as they did in 1884, when Southern iron was being introduced into the market, they say this can't last; basic iron can't be made; steel can't be made; the ore supply will soon give out, etc. Nevertheless, the furnace-owners in Pennsylvania are tearfully praying the railroads to do something to stop this influx of Southern iron in their markets. Just recently a prominent furnace-owner in Pennsylvania told me that one of two things had to be done, and at once—either freight must be put up on Southern iron to keep it out of the Northern market, or Northern foundry-iron furnaces must go out of blast. The present rise in the price of iron allows a living for all just now, but a decline will give Southern producers the almost absolute control of the foundry-iron market. Such being the condition in foundry irons, it is quite natural that producers of converting pig, either Bessemer or basic, feel very nervous at the threatened competition in their field by the Southern furnaces. The steel-rail manufacturers have enjoyed a monopoly which has required no "trust" to control. It has been absolute. Independent producers have all been taken in one by one, and the "rail manufacturers," for they are thus spoken of collectively, have simply dictated prices. Now, will Southern iron break into this trade?

For a number of years past efforts have been made to produce steel, or iron suitable for steel, in the South. It is unnecessary to go into the early trials and failures of the Roane Iron Co. in Chattanooga. In 1886 the South Tredegar works, in the same city, put in operation first one and then another small Clapp-Griffiths converter, producing a fair quality of steel. About the same time the Henderson Steel Co., afterward reorganized as the Jefferson Steel Works in Birmingham, tried to pro-

duce steel in an open-hearth furnace, and made also a fair quality of material. Shortly afterward the Roane Iron Co. erected a Bessemer converter, with the intention of using Bessemer pig made at its Rockwood furnace from Cranberry ore. This latter did not succeed because of the high cost of the ore and its low grade, so some English Bessemer pig was imported and converted. Then the Southern Iron Co. took the plant and repaired the open-hearth furnaces. The works started, using the duplex process, that is, desiliconizing in the Bessemer converter and then disposing of the phosphorus and finishing the conversion in the open-hearth furnaces. Later a process for desiliconizing was brought forward in Birmingham, in which the iron from the cupola ran into a bath of molten slag containing a high percentage of iron oxides. This removed silicon, and the resultant metal was then ready for dephosphorization and final conversion in a basic open-hearth furnace. This same process, with slight modifications, was afterward tried at the Chattanooga plant of the Southern Iron Co. Besides these trials, all of which were on a commercial scale, the officers of the Tennessee Coal, Iron & Railway Co. made numerous trials in a small way of nearly every new steel-making process introduced, but nothing was attempted on a commercial scale.

This is, in condensed form, the history of steel-making in the South. At all of the places mentioned steel was made, some very good and some exceedingly bad. The difficulty in each case was that because of the uncontrollable irregularity of the output and the high cost they were commercial failures. Ever since the basic open-hearth process was first talked of in connection with Southern iron, trials have been made to see whether an iron meeting its requirements could not be produced. Various users of the process require different qualities of iron. At Pottstown, Pa., for instance, an iron was required exceedingly high in phosphorus, over 2 per cent, if possible; under 0.5 per cent. silicon, and under 0.02 per cent. sulphur. The Southern Iron Co. endeavored to secure a similar iron for the Chattanooga works, making it at the Mannie and Aetna furnaces in Tennessee from an ore found at Mannie containing on an average about 55 per cent. iron, 6 per cent. silica and 1 per cent. phosphorus. The difficulty was with the silicon in the pig. It was seldom under 1.5 per cent. and usually over 2 per cent.; therefore a desiliconizing process was necessary. Other works allow a greater margin. It is claimed that the Carnegie Company in its contract specified the following:

Silicon, under.....	1.00 per cent.
Phosphorus, under.....	75 "
Sulphur, under.....	.05 "

These specifications are not nearly so difficult to fill as the others given. The only question to be answered is, and that is a vital one, Can an iron of this composition be made from Birmingham ores?

It might be stated here that one of the reasons advanced against the possibility of manufacturing steel in the South is that the amount of wrought scrap-iron available is exceedingly small. This is true, and has been found a serious difficulty in the operation of rolling mills. This scrap is necessary, because, when used with iron in steel-making, it reduces the relative proportion of silicon and sulphur present in the charge. If an iron can be made in which these elements are sufficiently low, it is evident that the amount of scrap required will be reduced as the quality of the iron becomes better.

Some three years ago the Tennessee Company experimented with Cowan furnace, and, using brown hematites from Lawrence county, Tenn., and some other points, made a certain amount of iron within the specifications above given. Later, it repeated the experiment at Little

Bell furnace, Bessemer, Ala., using Alabama and Georgia brown hematites, and at one time some red fossil hematites in the mixture. The results were fairly satisfactory, not perfectly so. Since both of the experiments above referred to were made there have been material improvements made in preparing coal for coking by more careful mining, washing and disintegrating. Similar improvements have been made in mining ore, and also changes at the furnaces and the better furnace practice that comes of experience.

Within the past few months the Tennessee Coal, Iron & Railway Co. has been again trying to produce a basic iron, this time at Alice furnace, in Birmingham, using only the hard and soft red fossil hematites. These trials have been full of difficulties. The red ores vary considerably in their iron and lime contents, requiring, therefore, the closest attention to the furnace. The soft red ore contains on an average 48 per cent. iron, 14 per cent. silica and 5 per cent. alumina; the hard ore 39 per cent. iron, 8 per cent. silica, 18 per cent. lime and 3 per cent. alumina. The washed coke contains from 12 to 14 per cent. ash, of which 5 per cent. is silica and 3.75 per cent. alumina. For flux a mixture of limestone and dolomite is used.

The average cinder when making foundry iron is:

Silica.....	34 per cent.
Alumina.....	15 "
Lime.....	32 "
Magnesia.....	18 "

The average iron from this cinder will contain 1.5 per cent. to 2.5 per cent. silicon. The cinder produced at Alice when making low-silicon iron within the specifications runs about 32 per cent. silica, and is therefore slightly more basic than the foundry cinder.

The statements made regarding the work at this furnace give the impression that iron within the specifications is being made at every cast. This is not the case, nor can the company reasonably expect that it will be. Sometimes two, three or four casts will be made, none of which can be classed as basic; then there will be one or several casts, all of which are within the limits of the specifications. Every cast is analyzed, and this determines its quality.

I stated that the company cannot reasonably expect to secure this iron at every cast. My reason for saying this is that the specifications represent but little above the minimum contents of the two important elements, silicon and sulphur, which can be secured from the red-hematite ores. While past experience is not always a criterion for future work, it has been shown time and again in this district by every furnace and company that has tried it that the red ores will not give a perfectly regular output, and particularly will this be so when the grade called for represents the extreme—the best that can be done. I do not understand why a mixture of brown ores is not used for this purpose. The price has, of course, much to do with it. Red ores are delivered for eighty-five cents per ton, and brown from \$1.10 to \$1.25. The latter are, however, higher in iron. At Little Bell furnace a mixture of washed and raw brown ore is being used with some red ores, and the average results are nearer the basic-iron specifications than at Alice. I think the greater part of the basic pig to be made in the South will come from these brown ores, as with them the minimum of silicon, etc., in the pig can be brought considerably below the figures required, thus allowing a fair margin for variation. With red ores there is none. The trials which have been made, as well as all past experience, show beyond any question that the specifications as here given can easily be met by using brown ores, though, on the other hand, there is a small increase in the cost.

The reason why the Tennessee Coal, Iron & Railway Co. prefers red ores is quite

plain. First, they are cheaper; and second—most important—the company's deposits of brown ore are neither so extensive nor of such quality as might be desired. If the company was to show that brown ores alone would make basic iron suitable for steel, it would put a premium on all brown ore in Georgia, Alabama and Tennessee, and quickly raise the price. There is plenty of this ore in the South. There are many millions of tons in each of the States named, and there would be but little increase in the cost of mining, but the Tennessee Company does not own the mines.

I do not want to in any way discourage this work. The Tennessee Company, whatever its motives, deserves great credit for the efforts which it has been making for several years both to improve the quality of Southern irons and to produce metal suitable for steel-making purposes. It has spent much money in this, and deserves a full measure of success. I think, however, that it would have been better to carry out the plan of the Little Bell experiments and obtain an entire success than this one at Alice, which is only partly a success.

H. S. FLEMING, M. E.

ENGLISH MONEY COMING.

Prospects of Large Investments in America Once More.

The MANUFACTURERS' RECORD has recently pointed out the probability of English money again seeking investment in this country, and the Washington correspondent of the Chicago Post in commenting on the same subject says:

"English investors are longing in a wholesale way for American gold mines. Their agents and experts are looking into the merits of nearly 100 properties in the mountain States, their field of inquiry extending over into Mexico. Fabulous fortunes have been made in the South African mines during the last few years, and the English mind, excited by the pleasurable experience, is desirous of taking in the good things of the same sort in America. There is no 'sucker' money afloat, and whatever investments are made will be the result of careful, thorough and painstaking investigation by the best equipped experts that money can hire.

"The day of wild speculation, 'salted' mines and confidence mining schemes is passed. The matter is down to a strictly business basis. Our English cousin is not frightened off by big figures, but when millions are named he must be satisfied that there is a fat profit ahead or he will not trade.

"Hence it is that the negotiations are proceeding slowly, but the drift is certainly this way, and in the course of a few months from \$75,000,000 to \$100,000,000 of British gold is reasonably certain to be transferred to American pockets in exchange for the titles to mining properties.

"British curiosity is also being directed to timber and coal properties in the United States, and English capitalists are considering several attractive propositions of that sort, some of them running into the tens of millions. This interest displayed by the English investors in American properties is encouraging in the extreme. They have been deaf, dumb and blind to financial blandishments of any sort from this side of the water for five years. The last thing they did was to put \$200,000,000 to \$250,000,000 into American industrials at one whirl, their investments covering everything from flour mills and elevators to packing-houses, iron foundries and breweries, the latter alone absorbing close to \$150,000,000.

"Some of these investments turned out badly, some are paying indifferently and still others—a few others—yield handsome returns. On the whole, however, it cannot be said that the foreigners paid all the properties were worth, allowing for present

values and prospective development for years ahead.

"Since England stopped putting cash into American securities a monstrous surplus has piled up in the banks and trusts companies of the tight little island, despite the tremendous losses consequent upon the collapses in Australia and South America and India. In normal time about \$900,000,000 pours into Great Britain annually by way of returns on investments in all parts of the world, bonded, industrial, maritime and commercial. During the last five years this vast annual income has been seriously cut down, but it is once more resuming something like its usual proportions, and with the welcome turn in the golden tide British nerve, so long dormant or subdued, has revived. There is no chance whatever for home investments. That avenue is closed. Money is a drug in London, the financial heart of the world, the great central reservoir for the accumulations of 500,000,000 people. The banks are paying next to nothing for private funds, and they groan at the sight of the incoming stream of eagles. London is a lake of money, bank full and running over.

"It has been only within the last ninety days that the desire to invest has taken possession of the owners of the mighty treasure, and the habit is far from being fixed. Progress has hardly been made beyond the inquiry stage, but it is a peculiarity of the British mind that inquiry is an almost certain forerunner of action. If your English investor is not ready to invest, he will not take the trouble to inquire. He is as torpid as a January toad, and dead to argument or invitation. You simply can't move him. Dynamite would not disturb his composure when the indisposition to financially investigate is on.

"The process of 'loosening up' is, therefore, looked upon by experienced international financiers as a most hopeful sign, and promoters of the larger type are beginning to display their wares with perfect confidence that business will result.

"Not much fresh foreign money seems to be going into the old familiar railroad securities for the moment. England and the Continent appear to be looking elsewhere for opportunities to invest. A rather better market for miscellaneous bonds is reported in London, but most companies have still on hand an unmarketed mass of securities that formed the basis for hundreds of millions of dollars' worth of debentures, and so long as that undigested load remains no marked revival in these specialties can be looked for. However, in that quarter an improvement is noted. Two hundred million dollars of Western and Southern farm mortgages have been hanging over London for a year or two, fearful of defaulted interest payments, but the big crops and booming business revival have restored confidence there, and now there is really nothing of a scarecrow nature in sight to frighten English money from our shores, and it is coming this way with a rush presently, or else all premonitory symptoms heretofore unfailing are at fault."

Road-Making at \$1500 Per Mile.

Floyd county, Ga., in which the city of Rome is located, is another part of the South which furnishes an illustration of the value of good roads. At present it has seventy-five miles of improved roadway, which cost less than \$1500 per mile. The work has been performed by convict labor. In preparing the roadbed a permanent surface is laid of crushed rock fully a foot in thickness. A correspondent in writing of the benefits of these roads says:

"The annual cost of the chain gang is about \$15,000, but the people do not grumble at this, as we have the finest roads in the State. Where one bale of cotton could be hauled before, now the same team will haul two or three. The roads are better than the streets of Rome."

HOW TO WAKE A DEAD TOWN.

Some Wise Suggestions from a Western Man.

Two weeks ago Mr. T. C. Tipton, of Loudon, Tenn., asked the MANUFACTURERS' RECORD "how to wake a dead town." Mr. Tipton told of the many natural advantages of Loudon, but pointed out how, from lack of energy and enterprise and because of the work of the never-dying croakers, these advantages were not utilized, and how, because of this, the town, like hundreds of others, was to all intents and purposes dead. The MANUFACTURERS' RECORD published his letter, and asked for suggestions as to how to quicken into life these dead towns that are a curse to themselves and to the country. Without life they furnish no employment, no opportunities for the young, who must either grow up in idleness or seek some new field in which to find a chance to work and live.

Wake up, dead towns, and become a blessing to your people and your section!

From an Indiana subscriber to the MANUFACTURERS' RECORD we have the following letter, which we commend to our readers, for it tells what enterprise can do in waking dead towns to life and creating employment for their people:


INDIANAPOLIS, IND., August 30.

Editor Manufacturers' Record:

In your issue of August 23 Mr. T. C. Tipton, of Loudon, Tenn., asks how to wake a dead town. I want to say that I never learned of a town that did "wake up" until every inhabitant took a financial interest in some manner, usually by aiding some factory enterprise, or thorough advertising and continuous advertising, not for a week, but for years in selected advertising mediums. A good medium costs money, but we get what we pay for every time. I believe the MANUFACTURERS' RECORD has been, and is today, doing more for the advancement of Southern interests than all others papers and magazines combined. I take it and read it, and my neighbors come and borrow it, and when they return it one would think it had been used for ten years. As a result of the MANUFACTURERS' RECORD being in my home, I took an interest in a large orchard company at Marshallville, Ga., called Red Clay Orchard Co. Mine is only one case, for my copy of the MANUFACTURERS' RECORD has been the means of causing Northern capital to go South to the amount of \$25,000. I am an Indiana man, and so are all my investing friends. Now, there are thousands of dollars of Northern capital lying in the banks and safety vaults not only in Indianapolis, but in all large cities, only waiting a favorable opportunity for investment. But those towns wanting financial aid must first show their own confidence by leading off, then the outside capital will follow. Let me tell your readers that in Indiana in seven years' time there were raised bonuses aggregating upwards of \$1,000,000 in only twelve towns. What did these towns do? Why they gave this money to factories that had capital of over \$20,000,000, employing upward of 20,000 hands, a weekly pay-roll of \$400,000 and an annual output of products exceeding the amount of capital stock. I know a small town of 1500 souls which wanted a factory, and wanted it badly. A meeting of business men was called; fifteen were present; out of the fifteen a self-constituted committee was appointed on ways and means to get up a subscription. One man who owned 200 acres of land offered to donate forty acres valued at \$10,000. His offer was accepted, the land was

platted, and within three days every person able to buy a lot (expect an occasional croaker, whom we have with us as well as the flea and serpent in every town,) bought of these 100 lots, and raised \$10,000 in easy payments. Two years ago that town did not circulate \$1000 a month, including every store; today they pay out in wages over \$3000 per week for help alone, and another big plant is building, while new stores and dwellings are going up on every hand. Moreover, every man, woman and child feels the beneficial effects of the distribution of money, and no one wanting work is idle. You say you can't do the same thing, and can't get the factory if you would? You can't do anything unless you try. While en route South last month I noticed many idle "hands" lounging around stores and holding a post down—big men playing marbles, others playing chess, shooting craps—men who looked to me as if they had brains for better business, and should be earning something for themselves and their families. Some say they have no means. Then let a few that have means join hands and start the ball rolling; get your advertisement started; announce to the world that your town is there, and let every soul that enjoys the town's privileges be instructed to talk out in meeting, in the country, in other cities, everywhere, that your town is awake, and that it is the place to live in and invest money in, and that your people are enterprising and full of push. Sometimes it pays to engage an experienced promoter, but make sure of your man; he can only aid in securing industrial enterprises. While South early this year I had the pleasure of meeting several distinguished gentlemen who are doing what the MANUFACTURERS' RECORD is accomplishing and advocating, viz, inducing settlers and capitalists to come South. It looks like the capitalists and settlers were doing it with a good will. Gov. W. J. Northen is doing good work, so also is Hon. J. L. Hand, of Pelham, Ga. I believe Senator Hand will succeed in securing the location of a large sanitarium and hotel for his town, Pelham. Judge Joseph Tillman, of Quitman, Ga., is also one of the right stripe to aid the upbuilding of the South. E. M. Rumph, of Marshallville, Ga., is doing great good in settling up his section. But these men are to be admired for their stick-to-it-iveness, which has brought the success that has already crowned their earlier efforts. Let not friend Tipton, of Loudon, Tenn., or others in other dead towns despair. You lead off and make an effort and try what you can do, as we never know without trying.

I will tell a true story here about an Arkansas town. The people wanted a factory badly, and concluded that a "saw mill and sucker-rod plant" would be the ideal for their quiet place to shake up the dust and pick up the idle and give the idler work, that he might have money to pay his grocery bill. The chairman of the meeting was directed to write to an Indianapolis firm for the cost of a complete "mill." The letter was answered, and in a few days a reply came from the chairman that \$800 was all the money the town could raise, and if they had the \$1500 demanded for such a "mill," what in "hades" would they want of a saw mill? I felt sorry for the town, for there were a few enterprising spirits there, and I trust that that kind of luck will not deter others from trying, for where there is a will there is a way. Now get to work and find it. G. W. CROSS.

 If you wish to keep posted on the progress of the South, read the Manufacturers' Record. Price \$4 a year.

THE COMMERCIAL MUSEUM.

Some Detailed Information as to How the Managers of this Important Institution Propose to Serve the Foreign Commercial Interests of the Cotton-Manufacturing Industry.

The Commercial Museum of Philadelphia is a public institution under the direction of a board of trustees appointed by the city. It is, however, in no sense a local institution, but is of necessity national in its scope and usefulness. It has secured the hearty co-operation of our own government, as well as that of all foreign countries before which has been brought the plan and purpose of its work.

There are four distinct departments: The collections of samples of raw products from all countries of the world; the collections of samples of European manufactured goods which have an export market with which the American manufacturer may compete; the bureau of information, and the scientific and experimental department. Among the foreign products of interest to the textile industries will be found samples of wools, hairs, cottons, raw silk, vegetable fibres, etc., from all portions of the globe. The collections already embrace several thousands of specimens from South American, South African, Mediterranean, Asiatic and Australian countries.

The museums are constantly receiving additions to these collections from foreign governments and other sources, and in a short time, if not already, will have the most comprehensive exhibit of the kind in existence.

But probably the collections of samples of goods manufactured in Europe with which the American manufacturer will have to compete will be of greater interest to our readers. This department is not nearly so complete as the former. However, it is the intention of the Museum to pay particular attention to the collecting of these samples during the next six months. Two representatives will start for South America within a few weeks with the special object in view of collecting samples of dry goods and all data as to the possibilities of trade for American manufacturers in the countries they visit. They will go first to Colombia and Venezuela, where the possibility of introducing American cotton goods is exceedingly encouraging.

These agents will visit the prominent merchants and importers in these countries. They propose to take with them a representative line of American cotton goods. These samples they will exchange for similar European goods, and in this way not only introduce the American dry goods, but bring back with them to the Museum samples of all the goods with which the American manufacturer must compete. At the same time all necessary data will be collected; the samples themselves will show the style and character of goods salable in South American countries—the extent of the market, the manufacturer's price in Europe, cost of transportation from Europe compared with the freight rates from the United States, the names and addresses of merchants handling these goods, duties, etc.; in short, all information necessary for the American manufacturer to determine whether or not his goods can find an export market.

The Right Way to Do.

A dispatch from Wilson, N. C., says: "For some time the question of good roads has been agitated here, and a mass-meeting of citizens has been held in the courthouse to devise means of improving the roads leading into town. A large number of representative men turned out. Mr. F. W. Barnes made the motion to ditch, elevate and otherwise improve the roads to the distance of a mile each way from town, as a starter. The motion was carried, and funds immediately raised to begin the work. The design is to put the 500 miles of roads

in Wilson county in a condition that will stand the heavy hauling of the winter, and the start near town is only a beginning of the work, which will gradually extend over the county."

At Roanoke, Va., a mass-meeting was recently held in the interest of good roads, at which General Stone, of the road division of the Department of Agriculture, made an address. At the conclusion of General Stone's remarks Mr. Price Moomaw, chairman of the board of supervisors, explained the methods of working the roads of Roanoke county and the results obtained. Mr. Moomaw was followed by Mr. H. W. Anderson, secretary of the State Association, who explained the objects and work of the association, and invited all those present to attend a State good-roads convention which would be held in Richmond under the auspices of the association in October next.

Mineral Interests Around Cedartown.

Mr. J. W. Adamson, of Cedartown, Ga., in a letter to the MANUFACTURERS' RECORD, says:

"We have in the immediate vicinity of Cedartown the following brown hematite ore banks: The Reed, Ledbetter, Cedartown Company, Wood, Wray, Hematite, Green, Oredell, Grady and Etna, besides many other smaller banks.

"All of these deposits or banks are located on or near a railroad, with spurs and sidetracks into the mines.

"All of these shippers agree that the freight rates are favorable, being less than one-half cent per ton per mile.

"The following analyses speak for themselves, and render further commendation of the ores unnecessary:

LEDBETTER BANK, WORKED BY NORTH GEORGIA MINING CO.	
Metallic iron	55.45
Silica	6.82
Phosphorus	0.567
CEDARTOWN COMPANY'S BANK, WORKED BY F. F. FITCH.	
Metallic iron	53.24
Silica	6.36
Phosphorus	0.29

"Every one of the above ten ore banks is now in operation, and their total yearly output is about 200,000 tons.

"One of the important features connected with these properties is the ease and economy of obtaining the ores in a merchantable condition.

"There are in this neighborhood also some small deposits of manganese. They have been worked to some extent, but not largely.

"This district is, however, quite rich in bauxite deposits. The mineral occurs in large quantities and is of the highest grade; the analyses made show the ore to be high in alumina and low in iron and silica. The Southern Bauxite Co. (R. Swain Perry, manager,) has been shipping for the past four years. Our bauxite is beginning to attract the attention of foreign countries.

"The large slate deposits near Rockmart demand some mention. This deposit has been worked for the last forty years with more or less activity at different times. It is now being fully developed by the Georgia Slate Co., which is working full time and shipping all over the South. The slate maintains its color and never fades a particle. It has great resistance to electrical currents and has stood the highest tests of any slate in the United States. This quality makes it particularly valuable for electrical switchboards."

Deep Water at Newport News.

Not long ago several Northern papers published an article in which it was alleged that at low tide the water around the piers at Newport News and Norfolk was not deep enough to admit of the free passage of large steamships. The report is flatly contradicted by the fact that the Spanish steamship Navarro, which left one of the piers a few days ago at low tide, was drawing twenty-seven feet seven inches of water at the time.

A Boom in the Iron Trade at Last— Close Resemblance to the Boom of 1879.

From advance proofs of the Bulletin of the Iron and Steel Association we take the following review of the iron and steel interests:

"The unexpected has again happened. The advance in the prices of iron and steel in this country which commenced in April last continued to be of a perfectly healthy character, proceeding by slow and easy stages until the second and third weeks of August, when large purchases of Bessemer pig iron by Western consumers at any prices that might be named suddenly caused everybody to realize the fact that the demand for this product was greater than the supply, and greater than the supply was likely to be for some time to come. During the last half of August, and until Saturday, September 7, the price of Bessemer pig iron advanced almost from day to day at all points of production, the advance at Pitts-

We have failed only in not being ready to meet an extraordinary demand on short notice.

"Will existing prices of iron and steel in this country lead to an increase in importations? This question is best answered by a comparison of present prices at home and abroad, with freight and duties added to foreign prices. On the 1st of July last we printed a comparative statement of the home and foreign markets at that time, and in the following table we add to that statement a comparison of present conditions. In the foreign products No. 1 foundry pig iron is Scotch Gartsherrie, angles, tees and beams are Belgian products, and the others are British products—all free on board. For the domestic products prices at Philadelphia are given, with the exception of steel rails, which are at mills in Pennsylvania. The price of tinplates as given in the table is per box of 100 pounds; all other prices are per ton of 2240 pounds. Our allowance for freight is in all cases liberal:

Articles.	July 1, 1895.				September 7, 1895			
	Price abroad.	Duty.	Freight.	Price of foreign products at New York.	Price of domestic products at Philadelphia.	Price abroad.	Price of foreign products at New York.	Price of domestic products at Philadelphia.
Bessemer pig iron.....	\$10 27	\$4 00	\$1 50	\$15 77	\$14 60	\$11 42	\$16 92	\$16 50
Gray forge pig iron.....	8 14	4 00	1 50	13 04	11 50	8 44	13 94	14 65
No. 1 foundry.....	12 27	4 00	1 50	17 77	13 15	12 27	17 77	14 00
Bessemer billets.....	18 86	6 72	1 75	27 32	22 80	18 85	27 34	25 25
Bessemer tinplate bars.....	18 24	6 72	1 75	26 71	25 40	18 24	26 71	27 80
Steel rails.....	17 03	7 84	1 50	26 37	24 00	17 03	26 37	24 00
Angles.....	21 23	13 44	1 50	36 17	31 30	22 19	37 13	38 08
Tees.....	21 23	13 44	1 50	36 17	31 30	21 41	36 35	39 20
Beams.....	21 23	13 44	1 50	36 17	31 30	21 41	36 35	39 20
Common bars, from store.....	26 76	13 44	1 75	41 95	31 30	26 76	41 95	35 84
Refined bars, from store.....	34 06	13 44	1 75	49 25	33 00	34 06	49 25	38 08
Black plates, for tinning.....	36 49	27 44	2 50	66 43	67 20	38 93	68 87	72 80
Tinplates, per box.....	2 43	1 20	10	3 73	3 75	2 31	3 01	3 75

burg during the three weeks mentioned being fully \$3 per ton, or from \$14.65 to \$17.75 per ton. Bessemer billets promptly sympathized with the movement in the raw material, and they also advanced \$3 per ton in the same period, or from \$22 to \$25 per ton. The lowest prices touched by these two products during the recent severe depression were recorded in January last, when Bessemer pig iron at Pittsburg was quoted at \$9.95 per ton and Bessemer billets in the same market at \$14.60 per ton. The advance in the first-named product from January to September has therefore been \$7.80 per ton, and in billets \$10.40 per ton. The advance in Bessemer pig iron and billets during the last three weeks has not been accompanied by a correspondingly active advance in the prices of other iron and steel products, but most of them have in the meantime reached higher quotations than had previously prevailed, and still higher quotations are probable, and at a very early day. We do not see how an advance in the price of steel rails can longer be delayed.

"The recent extraordinary demand for Bessemer pig iron is due partly to an extraordinary demand for finished Bessemer products, particularly structural material and rails, which has been steadily growing all summer, and partly to the apprehension that much higher prices for Lake Superior Bessemer ore and an actual scarcity in the supply of this raw material are possibilities of the immediate future. To this apprehension may now be added the possibility of a strike in the Connellsville coke region. It is useless to speculate whether or not there will be a real shortage of Bessemer ore from the Lake Superior mines or whether the price of coke will be advanced from any cause whatever; the important present consideration is that there is a scarcity of Bessemer pig iron. As in 1879, we were not prepared for so great a demand for finished iron and steel. Unlike 1879, however, we now have the capacity to produce in sufficient quantities every form of iron and steel that the country may need.

"It will be seen that from July 1 to September 7 foreign prices were practically stationary, a fact of much significance; that Bessemer pig iron for Eastern consumption can now be almost imported; that we have reached the danger line in the importation of some other products, and that our tinplate manufacturers are between two fires—the high cost of tinplate bars and sheets, whether made at home or imported, and the low cost of tinplates abroad."

An Irrigation Canal.

One of the important projects now being carried out in Louisiana is what is known as the Vermillion Canal, which will irrigate a large tract of land for cultivation. The Vermillion Canal Co., of 219 Decatur street, New Orleans, has excavated the canal. Mr. Henry Daspit, president of the company, thus writes to the MANUFACTURERS' RECORD:

"The canal is now complete and is between seven and a-half and eight miles long; it is eighty feet wide and carries a depth of water of about four feet. It is altogether a surface canal, and is used for the irrigation and not the drainage of rice lands. This season we are irrigating a fraction over 5000 acres; applications for next year reach over 10,000 acres. We may use the canal for transportation, but this seems a little remote just now, as the Southern Pacific Railroad is building a branch which follows our canal to its terminus; this branch is being built on our solicitation.

"We are not in need of any more machinery, but may at a later day let out more contracts, as the probability is that we may extend the canal.

"All the land contiguous to the canal, amounting to about 18,000 acres of good rice land, will be under the control of our company. It is all high, dry prairie and does not need reclaiming. The lands we are irrigating would, without the free and abundant supply of water we can give them, be practically valueless for the cultivation of rice."

FINANCIAL NEWS.

A Good Place to Live.

What can be accomplished by good government in a county is shown by the record of Hinds county, Miss. Last year the county tax was eight mills and the State six, making a total of fourteen. This year the county levy is six mills and the State five, making the total eleven mills, the lowest in the history of Hinds county since the war. In 1874 the total levy was thirty mills, in 1875 the levy was twenty mills, in 1878 sixteen, in 1880 sixteen, in 1890 fourteen, in 1895 eleven, and, notwithstanding the steady reductions, over \$100,000 of school and railroad bonds have been refunded, and Hinds county now has \$50,000 in her treasury. During the past year Hinds county invested in a number of Western road machines and has expended this year \$130,000 on its public schools.

This is the best document which can be issued to attract immigration to the county.

New Corporations.

Mr. A. O. Pesson and others are securing capital for a bank at Amite City, La.

The Bank of Buckner, Mo., it is reported, is to be reopened. T. G. Hall is president. A company is to be formed to open a banking-house, it is reported, at Ellijay, Ga.

The Mutual Insurance Co. has been organized at Charleston, S. C., by W. T. Thompson, George F. Von Kolnitz and others.

Missouri Building and Loan Association has been incorporated at Kansas City; capital \$500,000; incorporators, Frank Cooper, Albert Marley, W. O. Miller and others.

All of the \$50,000 capital needed for the national bank at Alexandria, La., has been taken, and the bank is about to begin business. John W. Castles and Alfred W. Wettermark, of New Orleans, are interested.

Mr. W. S. Witham, of Atlanta, and others have organized a bank at Davisboro, Ga. It will be known as the Bank of Davisboro. Mr. Witham is president; N. H. Jordan, vice-president, and Charles Marsh, cashier.

The Jennings Banking & Trust Co., of Jennings, La., has been organized with \$100,000 capital. Ira N. Pardee is president; D. E. Sweet, vice-president; J. D. Williams, cashier, and F. R. Jaenke, treasurer.

The Aurora Building and Loan Association was incorporated at Baltimore with a specified capital of \$25,000 by Messrs. August W. Lukin, Kurt R. Sternburg, Cornelius A. Edwards, Charles F. Mandler and George Crenner.

The newly-organized First National Bank of Alexandria, La., has elected the following directors: E. J. Barrett, Thomas Clements, A. Wettermark, Jr., H. S. Gossen, J. A. Williams, L. J. Hajenyos, B. Turner, B. E. Herstein and G. Gehr.

The Hebrew-American Building & Loan Co. of Baltimore has been incorporated with a specified capital stock of \$1,000,000 by Messrs. Meyer Hamburger, Davis Goldfadin, Abram Hamburger, T. Julius Schaumlöffel, Joseph Cohen, Israel Philip and Morris Markel.

The stockholders of the Mutual Loan and Building Association, of Savannah, Ga., have elected the following officers: President, J. S. Collins; directors, Hugh Logan, H. H. Hull, W. J. Lindsay, M. Sternberg, J. H. Furber, W. L. Grayson; secretary and attorney, J. Lawton Whatley; treasurer, Albert Wyly.

The Bank of Commerce of Hattiesburg, Miss., has opened for business with the following officers: G. L. Hawkins, president; J. P. Carter, vice-president; H. S. Jones, cashier; board of directors, G. L. Hawkins, J. P. Carter, R. M. Jones, H. S. Jones, William Conner and Frank Foote.

The bank begins business with a capital of \$25,000.

Ernest W. Monrose, Geo. T. Chamberlain and others have formed the Tampa Debenture Co. to do business at Tampa, Fla. The officers are to be: President, Ernest W. Monrose; first vice-president, Alfred H. Parslow; second vice-president, Chas. H. Monrose; secretary, Silas L. Biglow; treasurer, George T. Chamberlain.

The Central Building and Loan Association has been incorporated at Norfolk with a minimum capital of \$50,000. The officers are: W. A. Traylor, president and general manager; W. A. Fentress, vice-president, and W. B. Hatcher, secretary and treasurer. Messrs. John W. Carter and John S. Meade, of Danville, with the officers, are the directors.

New Securities.

A New York firm has bought \$10,000 worth of Dawson (Ga.) electric-light bonds. They sold above par.

The Galveston, La. Porte & Houston Railway Co. has secured permission from the State of Texas to issue \$300,000 in railroad bonds.

The city of Houston, Texas, will vote on the question of issuing bonds for public improvements to the amount of \$1,000,000. The election is to be held September 18.

Interest and Dividends.

The Krise Banking Co., at Lynchburg, Va., recently paid two dividends for the Bonsack Cigarette Machine Co. and the Lynchburg Building and Loan Association. The amount disbursed was \$51,100.

Financial Notes.

MR. CLARENCE F. VORMENT has been elected president of the Central National Bank at Washington, D. C., succeeding the late William E. Clark.

How to Attract Northern and Western Investors and Land Buyers.

Messrs. Pannill Bros., real-estate dealers, Norfolk, Va., writing about the outlook of real estate in that section, say:

"We have within the past two years made quite an outlay in advertising, and we can truthfully say that the *Southern States* magazine exceeds by far anything we have ever tried. In fact, so far as we can learn, it is the only medium that has ever brought us any returns. We have now under advisement several matters brought about through answers to our advertisement in your paper, any one of which will pay us many times over the cost of the advertisement."

It would pay every town and every property-owner and agent in the South to advertise in the *Southern States* magazine. It is published by the Manufacturers' Record Publishing Co., Baltimore, Md.

To Secure More Industries.

The manufacturers and merchants of Nashville, Tenn., have determined to encourage and develop the industrial interests of the city by forming a manufacturers' association. The body is to be entitled the Nashville Manufacturers' Association, and its main objects are to secure more industries and to enlarge the business of those already located in the city. The following officers have been selected: W. M. Cassetty, president; J. B. Morgan, vice-president; James Parrish, secretary; W. R. Hutchinson, treasurer; E. P. Bronson, G. H. Russell, P. L. Hoyte, George M. Goodwin and J. H. McPhail, directors.

MESSRS. W. O. UNDERWOOD and A. J. William have decided to publish a daily paper at Greensboro, N. C., to be called the Times. The MANUFACTURERS' RECORD trusts that the paper will exert its influence to develop its city and the South.

SOUTHERN TEXTILE INTERESTS.

[A complete record of new textile enterprises in the South will be found in the Construction Department, on pages 114 and 115.]

THE COTTON CROP OF 1894-95.

Complete Review of the Yield of Last Season and Consumption by American Mills.

A GREAT INCREASE IN THE SOUTH.

By Henry G. Hester, Secretary New Orleans Cotton Exchange.

The cotton crop of the United States for the year ending August 31, 1895, amounted to 9,901,251 bales, showing an increase over the crop of 1893-94 of 2,351,434, over that of 1892-93 of 3,200,886, and over the largest previous commercial crop (that of 1891-92, when the total was 9,035,379) of 865,872 bales.

The largest gain over last year has been in Texas (including Indian Territory), the production of which has been phenomenal, the excess being 1,216,798 bales. The group of Atlantic States (consisting of Alabama, Georgia, Florida and North Carolina) has increased 350,049 bales, and the Gulf States (Arkansas, Louisiana, Mississippi and Tennessee) show a gain of 784,587.

The year has been one of the most remarkable on record. Fears of an overwhelming crop and a drop in prices below the cost of production were entertained by planters from the beginning of the season, and the rush to market and realize amounted for a while to almost a panic. For the first time in the history of cotton planters themselves became "bears," and the talk early in September throughout the interior of five cents per pound and under for cotton bore its legitimate results. Even the very field hands were impregnated with the "low-price scare," and the naturally sanguine temperament of the Southern people failed utterly to enable them to see aught but loss and disaster. Fortunately, however, food crops in the South were abundant, and with low prices for all necessities planters were more independent of outside assistance than usual. The increased yield of cotton per acre also served as a partial offset to the decline in values, and a year which opened in the midst of financial gloom and threatened disaster closes, at least for the South, decidedly more satisfactorily than anticipated. The "10,000,000-bale crop" has been disposed of, the financial storm has gone, leaving no wrecks worthy of mention, but in its wake a feeling of cheerfulness and confidence. Our manufactures have received a remarkable impetus, and, as will be seen elsewhere in this report, give promise of a still greater increase in the immediate future that will rank the South as a most important factor in the consumption of her own cotton.

Taking the New Orleans price as a fair average for the United States, the lowest point touched was four and seven-eighths cents per pound for middling and the highest seven and eleven-sixteenths cents, but the average of the entire season was five and ninety-two-hundredths cents, a loss on the crop from last season's prices of one and fifty-eight-hundredths cents per pound, or, say, in round figures fully \$8 per bale, the bales this year being nearly ten pounds heavier.

The average commercial value of the crop has been \$30 per bale of 500 pounds each, against \$37.50 last year (500-pound bales) and \$42.50 in 1892-93, and the value compares with the past three years as follows:

COMMERCIAL CROP.

	Bales	Value.
1894-95.....	9,901,251	\$297,037,530
1893-94.....	7,549,817	283,118,137
1892-93.....	6,700,365	284,765,512
1891-92.....	9,035,379	338,826,712

So that we have obtained for the past crop \$41,789,182 less than was brought by the 9,035,000 crop of 1891-92, although we marketed 865,872 bales more than in that year.

That the financial depression had much to do with it is not to be questioned, but farmers themselves were the chief factors in depressing values by rushing their products to market. By the 1st of January 7,000,000 bales had been shipped from plantations, over 500,000 more than ever before during the same period, and the trade were left to struggle with the problem of how to protect an article evidently selling much below the cost of production.

Spinners bought largely of "cheap cotton," and speculators and investors resisted the decline step by step, but during the latter part of October the price sank under the weight of heavy supplies and other depressing influences to four and seven-eighths cents per pound, the lowest figure known in fifty years. From that point, however, the market soon rallied, ruling above five cents, touching as high as seven and eleven-sixteenths cents per pound at the close of the season and averaging for the year as above stated. These figures are given only to preserve the record, as it is not the province of this report to enter into a detailed statement of the course of the market.

As the comparison has so frequently been made with 1845, the year of greatest depression in ante-bellum times, the following extract from the New Orleans Price-Current's annual review of that year will prove of interest:

"The season commencing on the 1st of September, 1894, opened under circumstances not at all encouraging to the planting interest, and the progress of the market for a lengthened period but too clearly verified the most gloomy anticipations. * * * Inordinate speculation had been succeeded by disastrous reaction, and heavy stocks, with large (and in some instances extravagant) estimates of the coming crop, enabled consumers to dictate their own terms, all speculative spirit being prostrated and the markets of this country and of Europe at the mercy, so to speak, of the manufacturers. * * * About the 1st of January the greatest depression took place, the immediate cause being discouraging accounts from Europe, and the prices of middling to middling fair fell to four and three-eighths to five and a half cents, the extremes being three to seven and a-half cents for inferior to good and fine. These remarkably low rates, however, soon induced a disposition to operate more freely, * * * and the market began gradually to recover from its deep depression, and by the latter part of March prices had improved four to eight cents extremes, the quotations for middling to middling fair being five and three-eighths to six and a-half cents. * * * Thus the crop of 1844 has been disposed of. * * * All the mills of England were working full time, with orders in advance of production, and new machinery was being put in operation, the manufacturing trade appearing to be in a more healthy and prosperous state than at any former period known in its history. A corresponding degree of prosperity is also observable in the cotton manufactories of the Continent. * * * To this gratifying picture of the state of trade in Europe we take pleasure in adding that the manufactures of our own country present a condition of activity and prosperity which is without a parallel in the annals of any former period. Every loom is in active and profitable employment, and new mills are springing up in nearly every section of our wide extended land."

It was of 1844-45 that Donnell in his "History of Cotton" said "this was harvest year for cotton manufacturers. They paid £10,000,000 for raw cotton, receiving £45,000,000 for yarn and manufactured goods, leaving a margin of £35,000,000 for machinery, fuel, dyeing, bleaching, printing, wages, interest of capital and profit."

The interest in above is that there are so many points analogous to the year just closed. We have not data sufficient to show just how profitable manufacturing has been, but it is certain that low prices, so harmful to producers, have been the reverse to mill-owners. They have bought heavily of cheap cotton on both sides of the Atlantic, and in America mill takings North, South and Canada have, for the first time in the history of the trade, passed the 3,000,000-bale mark.

ACTUAL GROWTH.

Again the commercial crop is quite close to the approximate figures of actual growth. How much old cotton remains in the country can only be approximated, but it is doubtful whether, notwithstanding the enormous production, much over 2 per cent. of the crop has been carried over, and that includes stocks at counted and uncounted interior towns, on plantations and at Southern mills. In the commercial crop, it must be remembered, only actual consumption in the South is included, and not receipts.

Carrying out the table published in my last annual report, but omitting the figures prior to 1891-92 to save space, we have the following showing in round figures:

	Growth. Bales
Commercial crop 1891-92.....	9,035,000
Less excess held over from previous year.....	408,000
Plus grown not marketed in 1891-92.....	8,627,000
Actual growth of 1891-92.....	9,000,000
Commercial crop of 1892-93.....	6,700,000
Less excess held over from previous year.....	373,000
Plus grown not marketed.....	6,327,000
Actual growth of 1892-93.....	6,450,000
Commercial crop of 1893-94.....	7,550,000
Less left over from previous year.....	123,000
Plus grown not marketed.....	7,427,000
Actual growth of 1893-94.....	7,592,000
Commercial crop of 1894-95.....	9,901,000
Less left over from previous year.....	165,000
Plus grown not marketed.....	9,736,000
Actual growth of 1894-95.....	9,951,000

The smallness of the total old cotton carried over may be best appreciated when it is remembered that the amount left in the interior in the 8,653,000 crop year was 408,000, and in the 9,035,000 year it was 373,000 bales.

Commercial crop by States in thousands of bales for the four past years:

	1894-95	1893-94	1892-93	1891-92
Alabama.....	1000	925	740	1075
Arkansas.....	850	625	535	800
Florida.....	60	50	45	65
Georgia.....	1300	1125	940	1200
Louisiana.....	600	400	340	635
Mississippi.....	1200	916	755	1250
N. Carolina, etc.	465	428	367	480
South Carolina.....	800	740	635	780
Tennessee, etc.	350	275	235	350
Texas & I. Ter.	3276	2059	2108	2400
Tot. crops, bales	9901	7550	6700	9035

Notwithstanding the unpromising outlook at the commencement of the season, American mills have had a very favorable year, the combined takings North and consumption South having amounted to 626,989 bales over last year and 515,543 over the year before, the figures for the three years comparing as follows:

	1894-95	1893-94	1892-93
North.....	2,083,839	1,601,173	1,687,286
South.....	862,838	718,515	743,848
Total.....	2,946,677	2,319,688	2,431,134

Approximately, Northern mills have consumed from 300,000 to 350,000 bales more

than last season, while the actual consumption South has been 144,000 bales in excess.

Elsewhere will be found full details relating to the remarkable impetus received by cotton manufactures in the Southern States. The record of cotton spindles in the South shows:

In operation.....	2,484,124
Idle.....	131,670
New, not complete.....	558,516
Or say a total of.....	3,177,310
While last year it was.....	2,503,876
Showing a gain of spindles.....	673,434

Many spindles in new mills worked only part of the time during the past year on account of non-completion, and full time was not made by all the old mills during the first month or two, as it was not until after that time that the trade recovered fully from the depression of last season. It seems, however, that the general faith in the future of Southern cotton spinning was not affected by financial depression, as the spindles have gone on increasing at a more rapid rate than ever known before.

Of the 558,516 spindles noted above as new not complete, 219,000 are additions by old mills, and these with new mills containing 128,000 spindles, or say in all 347,000, report that they will be in operation between September and December. Others expect to start in January and later. In addition to this some of the idle mills are preparing to start up.

In my last annual report I pointed out that with the 2,500,000 spindles, active, idle and not complete, at that time the consumptive capacity of the South was 825,000 bales per annum. It now appears that 2,484,124 spindles (not all of which worked full time for the entire twelve months) actually consumed 863,000 bales. On the same basis as the past year, say one bale consumption to 2.87 spindles, the actual capacity of the 3,177,310 spindles now in the South, old, idle and not complete, would be 1,107,076 bales. It is not therefore unreasonable to assume that during the season commencing, with anything like fair trade, Southern mills will need about 1,000,000 bales. The following brief showing is appended indicative of the cotton-manufacturing industry for the past forty-five years:

COTTON TAKEN BY AMERICAN MILLS.

Year ending Aug. 31.	Northern mills. Bales.	South'n mills. Bales.	Total. Bales.	Commercial crops.
1850.....	475,702	87,067	562,769	2,171,766
1860.....	786,521	178,107	964,628	4,843,770
1870.....	806,890	90,000	896,890	3,154,946
1880.....	1,573,997	221,337	1,795,334	5,701,252
1890.....	1,789,258	546,894	2,336,152	7,311,392
1892.....	2,100,766	686,080	2,786,846	9,035,379
1895.....	2,083,839	862,838	2,946,677	9,901,251

The figures of Southern mills represent actual consumption.

AMERICAN COTTON CROP FOR FOUR YEARS
Year ending close of August.

	1894-95	1893-94	1892-93	1891-92
Port receipts.....	8,066,177	5,940,692	5,688,397	7,137,900
Overland to mills.....	1,687,101	931,706	912,146	1,253,560
Southern consumption.....	862,838	718,515	743,848	686,180
Less taken by Southern mills from ports.....	9,956,116	7,590,313	6,744,386	9,077,540
Total crops.....	9,901,251	7,549,817	6,700,365	9,035,379
EXPORTS.				
Great Britain.....	3,443,574	2,859,114	2,307,485	3,315,202
France.....	774,476	587,299	555,335	691,134
*Continent and Channel.....	2,500,911	1,775,784	1,523,655	1,850,541
Canada overland.....	99,316	65,692	58,971	76,360
Total exports.....	6,818,277	5,287,887	4,445,335	5,933,437
Stock at close of year.....	280,691	183,787	242,631	419,221
Northern mill takings.....	2,083,839	1,601,173	1,687,286	2,190,766
Average gross weight of crop per bale - lbs.	508.72	499.27	500.37	495.77

*Including Mexico, details of which are given in export table.

COTTON CONSUMPTION OF THE SOUTH FOR
YEAR ENDING AUGUST 31, 1895.

The cotton mills of the South have been more active within the past ten months of

of the year than ever before known, many of them having still suffered in September and part of October from effects of last season's depression. The returns last year (1894) were conflicting, but as a whole most unsatisfactory, seven out of twelve States reporting a material decrease, which, while offset by a moderate increase in the other five States, left the total consumption short by over 25,000 bales.

This season the situation has been reversed, and there is scarcely a mill in the entire list that has not spun more cotton.

In addition to this the increase in new mills and spindles has been many times greater than ever before known, the record showing as follows:

Total number of mills last year..... 386
Crossed out and merged into other concerns this year..... 9
Burnt..... 5

New mills added..... 372
Total now..... 435

As indicated by the tables annexed the total consumption in all the mills (old and new) for the year was 862,838 bales, against 718,515 for the season of 1893-94, and 743,848 for 1892-93, an increase over last year of 144,323, and over the year before of 118,990. The changes in each State as compared with last year are as follows:

Alabama..... 12,336
Arkansas..... 1,042
Georgia..... 39,836
Kentucky..... 1,089
Louisiana..... 3,143
Mississippi..... 1,776
Missouri..... 1,555
North Carolina..... 52,415
South Carolina..... 18,459
Tennessee..... 6,278
Texas..... 2,298
Virginia..... 4,116

Total gain..... 144,323

The increase in the average consumption per spindle in mills in operation has been 16.85 pounds over last year, 4.15 over year before last and 3.85 over 1891-92. It must be remembered, however, that last year quite a large number of spindles in active mills were idle. For example, my report then showed that "in Georgia 160,000 spindles of mills in operation had been stopped for periods of from one to eight months, equaling a loss of 66,000 for the year, and that in North Carolina 272,000 spindles in active mills had been affected similarly, the loss equaling 74,000 for the entire year."

The gain this season is best shown by the annexed comparison:

AVERAGE CONSUMPTION PER SPINDLE BY SOUTHERN MILLS.
1894-95..... 164.45 pounds.
1893-94..... 147.60 "
1892-93..... 160.30 "
1891-92..... 160.60 "

Elsewhere I have given the consumptive capacity calculated by number of spindles per bale. The following shows the capacity of the South at this year's rate of consumption per spindle, reducing the pounds to bales of this year's average net weight of Southern mills, 473.46 pounds, viz:

Number of spindles in mills, active, idle and new not completed..... 3,177,310
Consumption capacity in pounds at 164.45 pounds per spindle..... 522,568,629
Equal in bales of 473.46 pounds each..... 1,103,596

Annexed shows the progress of the South in mills and spindles during the past thirty-five years:

	Number of mils.	Spindles.
1860.....	162	295,359
1870.....	149	338,860
1880.....	104	561,360
1890.....	336	1,819,291
1895.....	435	3,177,310

An interesting point this year is the increase of cotton consumed in woolen mills, doubtless due to the low price of the staple.

The following tables show totals of mills, looms, spindles, consumption by States and other interesting facts relative to the manufacture of the great staple:

SOUTHERN COTTON MILLS IN 1894-95.

States.	Total.	In operation.		Idle.	New not completed.
		Old	New		
Alabama.....	30	24	3	1	2
Arkansas.....	3	3			
Georgia.....	71	59	3	6	3
Kentucky.....	11	11			
Louisiana.....	5	5			
Mississippi.....	11	7		3	1
Missouri.....	4	2		2	
North Carolina.....	161	127	10	8	16
South Carolina.....	80	53	3	5	19
Tennessee.....	34	21	8	5	
Texas.....	10	3	1	5	1
Virginia.....	15	11		2	2
Total.....	435	324	30	37	44

NOTE.—Woolen mills using cotton this season and not reporting any last year added to list under head of "new."

SPINDLES.

States.	Total.	In operation.		Idle.	New not completed.
		*Old.	New		
Ala.....	218,993	177,288	8,505	2,200	31,000
Ark.....	8,748	8,748			
Ga.....	613,806	512,780	20,820	20,214	59,992
Ky.....	70,224	70,224			
La.....	64,200	64,200			
Miss.....	67,601	55,601		2,000	10,000
Mo.....	17,044			17,044	
N. C.....	793,614	621,322	21,872	8,740	141,680
S. C.....	975,074	636,594	19,776	16,840	301,864
Tenn.....	126,732	102,422		24,310	
Texas.....	63,922	32,564		31,358	
Va.....	157,352	131,408		11,964	13,980
Total.....	3,177,310	2,411,151	70,973	134,670	558,516
L'st yr.....	2,503,876	2,188,708	93,788	129,932	91,448

*Including additions to old mills less spindles thrown out.

SOUTHERN COTTON CONSUMPTION, YEAR ENDING AUGUST 31.

(Actual figures reported by the mills).

States.	No. Mills.*	Looms†	Spin-dies.†	Bales	
				1895.	1894.
Ala.....	27	3,415	185,783	66,928	54,592
Ark.....	3	174	8,748	2,240	1,198
Georgia.....	62	13,692	533,600	206,115	165,284
Ky.....	11	1,908	70,224	21,393	20,304
La.....	5	1,534	64,200	16,692	13,569
Miss.....	7	1,800	55,601	15,937	14,161
Mo.....	2			2,401	546
N. C.....	137	14,654	643,194	226,782	174,307
S. C.....	56	20,067	656,370	227,967	209,508
Tenn.....	29	2,447	102,422	31,127	24,849
Texas.....	4	992	32,564	12,420	10,122
Va.....	11	4,180	131,408	32,833	28,717
Totals.....	354	73,863	2,484,124	862,838	718,515
Less consumed and taken from Southern seaports, and included in port receipts.....				54,865	40,496
Net consumption to be added to crop.....				807,973	678,019

* Mills in operation only.

† Employed in mills in operation.

The following shows the consumption of Southern mills during the past two years in pounds, and the average net weights per bale:

States.	Pounds.		Aver. Weight.	
	This Year.	Last Year.	This Year.	Last Year.
Alabama.....	32,368,629	26,596,616	483.63	487.19
Arkansas.....	1,112,070	570,270	496.46	476.02
Georgia.....	97,836,864	78,722,079	474.66	473.43
Kentucky.....	10,518,697	9,934,195	491.24	489.27
Louisiana.....	8,102,599	6,503,535	485.44	497.29
Mississippi.....	7,669,847	6,655,275	483.14	469.97
Missouri.....	1,235,270	410,310	514.48	485.00
North Carolina.....	104,267,132	79,073,841	459.77	453.49
South Carolina.....	1,807,206	97,942,231	474.09	467.49
Tennessee.....	15,312,173	12,664,424	491.93	485.51
Texas.....	6,347,400	5,171,970	509.45	510.95
Virginia.....	15,674,672	13,391,495	477.41	466.32
Total.....	408,522,635	337,036,041	473.46	469.07

CONSUMPTION UNITED STATES.

	1894-95. Bales.	1893-94. Bales.
Total crop United States.....	9,901,251	7,549,817
Stock at ports begin'g of year.....	183,787	242,631
Total supply.....	10,085,038	7,792,448
Exported during year.....	6,718,961	5,222,197
Sent to Canada.....	99,316	65,600
Burnt at delivery ports.....	39,993	1,066
Stock at close of year.....	280,091	183,787
Total takings for consump'n. Of which, taken by spinners in Southern States—total..	7,138,361	5,472,760
Taken by Northern spinners.....	2,946,677	2,319,688
Taken by Southern spinners.....	862,838	718,515
Taken by Northern spinners.....	2,083,839	1,601,173

GOVERNMENT CROP REPORT.

A Decline in the Condition of Cotton which Ought to Mean High Prices.

The September cotton report of the Department of Agriculture shows a decline from the August condition of the crop, which was 77.9, to 70.8 per cent., a decline of 7.1 points.

This makes the lowest September estimates of the plant since 1881, when it was reported at 70 per cent. The next lowest since 1881 was the condition of 1893, when it stood for the same month at 73.4.

Cotton suffered severely during the month of August from the drouth which characterized the early part of the month, and excessive rain which succeeded it.

The presence of boll-worms has worked great injury, and the crop has been injured by shedding and rust. The causes mentioned by Texas correspondents for the deterioration in the State are as follows:

Drouth, hot weather, floods, soil worms, sharp-shooters, Mexican weevil, caterpillars, army worms and weeds.

There is striking unanimity in the pessimistic tone expressed by correspondents throughout all of the cotton-raising States. The State averages are as follows, with comparisons with the figures of last month and with the comparative figures for recent years:

	Sept.	Aug.	1894	1893	1892	1891	1890
Average.....	70.8	77.9	85.9	73.4	76.8	82.7	85.5
Alabama.....	84	81	100				
Virginia.....	79	74	88	76	76	79	98
N. Carolina.....	81	81	86	63	77	81	87
Georgia.....	81	87	84	77	79	84	86
Florida.....	79	92	82	85	66	88	94
Alabama.....	74	81	86	78	74	83	84
Mississippi.....	77	83	85	78	72	83	87
Louisiana.....	75	71	91	81	76	85	93
Texas.....	56	71	84	63	81	82	77
Arkansas.....	79	86	89	80	79	86	89
Kentucky.....	85						

The Pelzer Water-Power Development

The Pelzer dam, which is to develop power at Pelzer, S. C., on the Saluda river, is nearly completed. This dam, which is being built by the W. A. Chapman Co., of Providence, R. I., is one of the most extensive works of its kind in this country. It is calculated, according to engineers' estimates, to produce for present purposes 5140 horse-power by operation of a series of Victor turbine water wheels of 1028 horse-power each, among the largest ever built. The dam is thrown across the river at a point where the natural formation of the banks provides for a very large storage reservoir, so that ample water is furnished for power purposes at dry seasons of the year. The dam is about 700 feet in length and forty-five feet high at its highest point. The base is twenty-six feet in width, and in some places extends thirty-five feet below the river bed to reach a solid foundation. The width is continued at twenty-six feet until the dam reaches a height of eleven feet. At this point it is narrowed to twenty-three feet, and is gradually contracted to the top, which is six feet in width. A roadway of 500 feet in length at the eastern end is provided, which is ten feet lower than the rest of the dam. This roadway is designed to throw the current of water from the power-house, which lies on the western part of the dam, in time of high water. The dam is pierced near the power-house by two large flood gates, with four conduits or pipes having a combined capacity of eighteen cubic feet. Just above the floor of the power-house will be five metal sluices, in which will be set the turbine plant.

The power-house proper is 110 feet long by fifty feet wide, with a height of sixty feet from the top of the power-house to the bottom of the wheelbed. It is floored with bedded stone, covered with concrete to a depth of eighteen inches, with a two-inch foundation of Portland cement. Besides containing the turbine plant it will have five electric dynamos. The current from

these will be used to operate the Pelzer mill now being completed three miles distant from the town of that name. This mill will contain 55,000 spindles, and will be the largest single spindle mill in the South.

The work on this dam was commenced in September, 1894, and has attracted much attention from the methods employed. It was necessary in its construction to use a cableway supported by two large towers, which carried the blocks of stone by a patent conveyor across the stream at a height of 100 feet. While, as stated before, 5140 horse-power will be used for the present, the power can be developed to a much larger degree as it becomes necessary.

Want to Build \$1,000,000 Cotton Mill South.

Mr. Wm. T. Lang, of the Brookside Mills, Knoxville, telegraphs the MANUFACTURERS' RECORD in answer to an enquiry as follows: "New York capitalists agreed to erect a \$1,000,000 cotton mill in the South if I would assume management as resident agent. I declined today, being under promise to engineer and manage Brookside Mills, of this city, which has just increased its capital to \$500,000, and is now making large addition to capacity."

Textile Notes.

A COTTON mill is talked of at Davisboro, Ga.

ENDEAVORS are being made to organize a cotton mill company in Covington, Ga.

COL. JOS. S. JAMES, of Douglasville, Ga., is corresponding relative to the erection of a knitting mill.

MESSRS. CLARK AND CRANDALL are soliciting stock for the cotton mill at Elizabethton, Tenn., noted last week.

THE Cheraw Knitting Mill, at Cheraw, S. C., is operating day and night in order to fill its orders. About sixty-five operatives are employed.

THERE is a report current that a \$250,000 cotton mill will be built at Burnett Shoals, near Athens, Ga. Mr. R. L. Bloomfield owns the property.

THE Valdese Hosiery Mill at its new location, Newton, N. C., expects to make from 115 to 125 pairs of hose per day. The yarns will be supplied by the Newton Cotton Mills.

THE mill proposed at Austin, Texas, would cost \$150,000, and have 5000 spindles, 260 looms, employing 175 operatives. Hon. Walter Tips has the subscription books in charge.

THE unfinished mill building at Bessemer City, N. C., will be completed and equipped with cotton machinery. Mr. J. M. Odell, of Concord, purchased the property recently through Mr. S. J. Durham.

THE Lynchburg Cotton Mill Co., Lynchburg, Va., at a recent meeting decided to put in 1536 new spindles, which will make 21,536 in all; also will establish machine shop to make its own repairs.

A CONTROLLING interest in the Crown Mills, at Greensboro, N. C., has been sold to Cesar Cone and E. D. Garsed, who will put in new machinery and operate the plant. It contains 6600 spindles.

A \$100,000 cotton mill is proposed at Fayetteville, N. C., and Messrs. W. S. Cook and E. L. Pemberton are soliciting stock for a company. Payments are to be made on the monthly instalment plan.

THE new 25,000-spindle mill which the Dwight Manufacturing Co. is erecting at Alabama City, Ala., is nearing completion, and by November the machinery will be installed and put in operation. Orders for the machinery have been placed.

A COMMISSION for a charter has been issued to the Fairfield Cotton Mills, of Winnsboro, S. C., the incorporators being

W. R. Doty, A. S. Douglass, T. K. Elliott, W. C. Beattie and others, to erect a plant. The capital stock is placed at \$75,000, and shares will be payable, if desired, in monthly instalments.

A NEW YORK company with a capital stock of \$1,000,000, according to a report, contemplates locating a big cotton mill at Knoxville, Tenn. It is said that it is proposed to make goods suitable for export to South America and Africa.

THE Eden Park Cotton Mills Co., of Douglasville, Ga., noted last week as organized, has for president and manager Mr. Simon Baer, of Cincinnati; J. A. Pittman, vice-president, and Jos. S. James, secretary. The company will equip a plant of 3000 spindles, and make hosiery yarns its principal output. The capital stock is \$50,000, with privilege of doubling.

THE Brookside Cotton Mills' new addition at Knoxville, Tenn., will include a weaving-room 380x128 feet, two stories high, to be filled with the latest improved machinery, and the plant's capacity will be quadrupled. Four hundred more hands will be required for the new addition. The company's capital stock is now \$500,000, having been increased from \$125,000.

THE stockholders of the Goldsboro Mill, at Goldsboro, N. C., have taken the name of the Goldsboro Cotton Mill Co. and organized with \$60,000 paid-up capital and power to increase this to \$500,000. The company buys the old mill, and will put in new spinning machinery and enlarge the mill, as recently stated. C. Dewey was elected president; E. B. Borden, Jr., secretary-treasurer, and H. Weil, C. Dewey, E. B. Borden, F. K. Borden, W. K. Parker and H. Wilson are directors.

THE Wayne Cotton Mills, at Goldsboro, N. C., heretofore owned by Mr. W. K. Parker, of Cumberland, N. C., has been incorporated, and Sol Weil elected president; Charles Dewey, vice-president, and E. B. Borden, Jr., secretary-treasurer. The officers, with Henry Weil and Henry Leigh, are the directors. A committee has been appointed and sent East to buy the necessary machinery which is to be added for manufacturing sheetings and shirtings. A capital of \$60,000 has been subscribed and paid in.

ONE of the best equipped cotton factories in the South is that of the Union Cotton Mills at Union, S. C. The company is now very busy producing fine sheetings 68x72 count, and is operating 13,000 spindles and 350 looms. The company's new mill, now in course of erection, is progressing rapidly, and will be completed and ready for operation by June of next year. It is to be equipped with 46,000 spindles and 1200 looms for the production of the same grade of goods as the present plant. The new building is 457 feet long, 127 feet wide, four stories high, and will be equipped with every modern mill improvement, including water system, electric lights, heating plants, etc. The machinery will be Fales & Jencks spinning, Pettee cards and drawing, Knowles looms and Howard & Bulough openers, pickers and lappers. Messrs. Carey, Bayne & Smith, of Baltimore, New York and Philadelphia, are selling agents for the company.

THE interest which Northern parties are taking in Southern projects is shown by the work of Mr. E. S. Whitney, of Allentown, Pa., who has been alive to the opportunities offered for securing railroad contracts. Mr. Whitney has obtained one for constructing a line between Wellsburg and Brooksville, Ky., ten miles. The fact that this enterprise was under way was noted a few weeks ago by the MANUFACTURERS' RECORD in its Construction Department. Mr. Whitney is but one of many Northern contractors who are profiting by the opportunities that the South offers.

RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department, on page 115.]

A Baltimore & Ohio Feeder.

The Baltimore & Ohio has finally succeeded in securing the Valley Railroad of Ohio, purchasing it at auction for \$3,070,000. The Wheeling & Lake Erie opposed the Baltimore & Ohio until the latter succeeded in securing a majority of the Valley 6 per cent. The matter was then settled by an agreement between the Wheeling & Lake Erie and the Baltimore & Ohio, giving the former trackage privileges over the Valley road. Besides being an important feeder to the Baltimore & Ohio, the Valley Railroad gives it entrance into Cleveland and another lake shipping port.

The Chesapeake & Ohio.

In recent issues the MANUFACTURERS' RECORD has referred to the very satisfactory annual report of the Chesapeake & Ohio Company. The complete report, which has just been issued, however, is well worth careful analysis as emphasizing what we have already stated as to the admirable manner in which this system is managed.

Among the items classed as improvements to way are \$198,123.25 for a double-track bridge over the Big Sandy river, in Kentucky, and about \$65,000 for improvements in and near Ashland, Ky.; also the purchase of several thousand tons of 75 and 100-pound steel rails, the latter being the heaviest ever laid on an American line. It is operated under a policy which provides liberally for maintaining the several lines in the best physical condition and for keeping the rolling stock up to the highest standard. As an instance of this, it may be stated that during the year just closed the company allowed for the maintenance of freight cars alone \$587,619.63, or over \$42 per car; on locomotives \$341,245.94, or nearly \$1000 per locomotive, and on passenger cars \$170,461.94, or over \$800 per car.

The number of cars has been kept good, while the capacity has been increased. All of the new cars purchased or built are standard 30-ton cars, while a large number of those destroyed were old and of light capacity.

The company's increase in coal and coke business is shown by the distribution of 3,450,321 tons, nearly 800,000 tons more than in 1894. Of this 1,236,742 were hauled over the whole line to its chutes at Newport News, about 40,000 tons more than in 1894. As to passenger earnings the report indicates a decrease of about \$164,000 as compared with the previous year. The earnings, however, are not falling off, as the year 1893-94 included four of the heaviest months of the World's Fair traffic, of which the Chesapeake & Ohio secured a large share from points along its system. Taking out the extraordinary business occasioned by the fair and comparing it with 1894-95 a decided increase is shown during the latter period.

The policy of the company in adding to its rolling stock, in addition to keeping that on hand in perfect repair, is another feature of the report. During the year \$304,000 was spent in the following way:

"In buying 180 new freight cars (to replace old cars destroyed or dismantled), costing \$80,570.97; two new ferry boats, costing \$8,705.69; filling trestles, \$81,394.45; undergrade crossings, \$15,898.78; completing the ballasting of the Peninsular and James River divisions, \$28,865.08; cutting out tunnel for a double track, \$41,715, and thirteen miles of sidings." Had those in power desired to starve the system for the sake of making a still better showing this money need not have been spent, but could have been used to swell the amount of net earnings; but as the Chesapeake & Ohio is being managed for

the interest of its stockholders, and with the idea of improving the property constantly kept in mind, this was not done.

In closing his introduction to the reports of the general condition of the system President Ingalls says:

"There are many things which afford encouragement at the time of writing this report. Such furnaces along the line as have been closed for the last two years are resuming work. The coke ovens which have been shut down are all at work, and there is a distinct and positive improvement in the local business of the line, both in passengers and freight."

Stock All Taken.

The Richmond Traction Co., which proposes to add another electric road to the system in operation in that city, has so attracted the attention of investors in street-railroad securities that all of its capital stock, \$300,000, was taken in three hours, when the books were opened a few days ago. The company has been organized by electing Mr. John Skelton Williams, of Richmond, president; W. M. Habliston, of Petersburg, vice-president; board of directors, Henry A. Parr and J. W. Middendorf, both of Baltimore; W. M. Habliston, of Petersburg, and E. B. Addison, Everett Waddy, P. B. Shield and John Skelton Williams, of Richmond.

Railroad Notes.

PRESIDENT T. EDWARD HAMBLETON, of the Albany, Florida & Northern, has appointed Mr. J. S. Crews general manager, with offices at Albany, Ga.

THE Knoxville, Sevier & Jefferson Counties Boat Co. has been organized to operate steamboats in Tennessee waters by S. S. Howell, D. R. Hicks and others.

THE Jacksonville, Mayport & Pablo road, extending from Jacksonville, Fla., to the Atlantic coast, has been sold by order of the court to J. N. C. Stockton.

MR. ROBERT GILLMAN, of Kansas City, Mo., has been appointed chief engineer of the Kansas City, Pittsburg & Gulf system, succeeding Mr. Richard Gentry, who has resigned.

THE court has decreed the sale of the Central Railroad of Georgia, to be held at Savannah on October 7. The Savannah & Western division of the system will be sold at Birmingham, Ala., on October 5.

THE St. Louis, Danville & Southwestern Transportation Co. has been organized at Nashville, Tenn., with a capital stock of \$50,000. Capitalists of Evansville, Ind., and several Southern cities are interested. The company will operate a line of boats from Evansville and from St. Louis up the Tennessee river.

THE Waco & Northwestern road, extending from Ross to Bremond, fifty-four miles, has been sold to Wilber F. Boyle, of St. Louis, who is supposed to be acting for the Missouri, Kansas & Texas system. It is supposed that if the Missouri, Kansas & Texas is the purchaser, it will complete the road to Trinity, Texas, to give it an eastern extension.

GENERAL PASSENGER AGENT TURK, of the Southern, will deliver the semi-annual address at the conference of the American Association of General Passenger and Ticket Agents to be held at Boston, Mass. As representative of one of the most extensive systems in the world, Mr. Turk will have an opportunity to show his associates what railroads of today are doing in the South.

At the annual meeting of the directors and stockholders of the San Antonio & Aransas Pass Company the present directors were re-elected as follows: T. E. Stillman, M. D. Monserrate, Reagan Houston, R. H. Innes, Thos. B. Palfrey, William Mahl, J. W. Terry, William Perry

and F. H. Davis. The present officers were also re-elected as follows: T. E. Stillman, president; M. D. Monserrate, vice-president; Reagan Houston, secretary, and W. H. Field, treasurer.

THE Roanoke & Southern division of the Norfolk & Western system has elected officers as follows: President, E. H. Fries; first vice-president, H. S. Trout; second vice-president, John Gill; third vice-president, J. H. Spencer; directors, J. W. Fries, C. H. Fogle, I. L. Vaughn, J. E. Gilmer, R. J. Reynolds, J. W. Hanes, H. L. Riggins, B. J. Shepperd, P. P. Watson, J. H. Matthews, S. F. Jamison, I. H. Stewart, R. A. Backner and W. M. Semple. This line extends from Roanoke to Winston, Salem, N. C., 121 miles, and is operated by the Norfolk & Western.

THE BATTLESHIP TEXAS.

Her Machinery Being Adjusted for a Trial Trip—A False Report.

Arrangements are now being made for the official trial of the battleship Texas to develop the horse-power of her engines and to officially ascertain her speed. For this purpose the government will appoint a board of naval experts to be on board during the trial. The machinery is in charge of the Richmond Locomotive and Machine Works, and the trips now being made are for the purpose of adjusting the mechanical power properly. A dispatch was recently sent out from Norfolk that on a trial trip an accident had occurred due to defective ventilation, and that the trip had been a failure. As a matter of fact, there has been no trial trip, and the MANUFACTURERS' RECORD can state on the best authority that the dispatch is erroneous. Admiral Brown, at the Portsmouth navy-yard, says:

"The whole thing is a canard and in line with other false reports that have been sent out regarding the Texas. The plain fact is, the Texas has had no trial trip as yet, nor is the time for her official trial set, and it won't be until everything is in readiness. I received a letter from Captain Glass after his trip yesterday, and there is nothing in this story at all. The ship is working all right. It is not decided when the trial is to come off, nor is the trial board appointed. When Captain Glass is ready he will notify the department that in three days the trial may take place, and the board will be appointed and sent down to attend the trial."

President W. R. Trigg, of the Richmond Locomotive Works, corroborates Admiral Brown's statement. The situation was this: Owing to delays in completing the haul of the Texas the government had more than a year ago taken the machinery off his hands and paid for it, reserving, however, a sum sufficient to pay for the final work and adjusting that could not be done until the ship itself was entirely finished. The ship is now finished, and the government is having preliminary runs made in order to adjust and make such alterations and changes as are usual and necessary in putting such a mass of machinery in perfect working order. The fact that its weight is 1,800,000 pounds, with twenty five miles of piping and 750 valves, conveys an idea of what adjusting it means.

"While the government is making the preliminary runs," said Mr. Trigg, "we have on board a force of men under Mr. George F. Coleman, who will have charge of the machinery during the official trial—a character of work in which he has had large experience. He will say when the machinery is ready for us. It may be delayed several weeks, as was the case with the Maine, and some of the new ships have been delayed for as many months, all of which is perfectly understood at Washington."

COTTONSEED OIL.

This department is open for the full and free discussion of trade topics and practical questions, and contributions are invited from men who are identified with this industry. Items of news are always acceptable.

The Market for Cottonseed Products.

NEW YORK, September 10.

Toward the close of last week and early part of the present the cotton-oil market assumed a fairly active character. Offers of prime summer yellow at 26 $\frac{3}{4}$ cents and 25 $\frac{3}{4}$ cents for good off-grade proved attractive figures to exporters, the former, or prime variety, being destined for Mediterranean points, and the latter to France and England chiefly. It must be stated, however, that a certain proportion of the transactions referred to consisted in the redisposal of oil held over, and which was originally purchased as a prospective compound-lard ingredient. Conflicting rumors have gained currency concerning future hog supplies, together with the influence the latter may exert on the consumption of oil during the next six or eight months. There are speculators and others whose interests are subserved by circulating bearish prognostications at this time, their position being apparently strengthened by the coming large corn crop. They maintain that with cheap feeding products—the direct result of abundant crops—the market will be glutted with cheap hog products, which in turn will very seriously restrict cotton-oil consumption as a compound-lard ingredient. With pure lard at 6 $\frac{3}{4}$ cents, and the possibility of a further decline, the demand for the compounded material is necessarily restricted. Nevertheless, latest investigations disclose the fact that hog supplies during the ensuing autumnal and winter seasons will not exceed those of the past two years. With seed values suitably adjusted, it must be conceded the outlook for the new season is not of such a gloomy character. There is no disposition on the part of Western and Eastern refiners to anticipate their needs, and at this writing dullness pervades the situation. Sales for future delivery—October—aggregating 120 tanks crude from the mills direct to Western refiners are reported at prices ranging from 17 $\frac{1}{2}$ to 18 $\frac{1}{2}$ cents. With the manufacturers in accord with the views of purchasers, the foregoing quantity of new oil transactions would have been substantially increased. White oil is firm at 31 cents. Exports aggregate 75,000 gallons for the week, 40,000 gallons of which were shipped to France. Receipts are light. Prices are as follows: Prime crude, 24 cents; crude, off quality, 21 to 23 cents; prime summer yellow, 26 $\frac{3}{4}$ to 27 $\frac{1}{2}$ cents; butter oil, 30 to 31 cents; off-grade yellow, 25 $\frac{3}{4}$ to 26 $\frac{1}{2}$ cents; white oil, 31 to 32 cents, and soap stock, 1 $\frac{1}{4}$ to 1 $\frac{3}{4}$ cents per pound.

Cake and Meal.—There is little doubt that a very much increased quantity of cotton meal will go into consumption in the form of fertilizer than has characterized previous seasons. That cake and meal as stock-feeding products will be restricted to a certain extent in the home channels of distribution is conceded, owing to the expected heavy corn crops. But the regular reports made by the State chemists from the respective agricultural stations concerning the superiority of cotton meal, whether as a feeding product or fertilizer, are not without exerting a wholesome effect, irrespective of the market fluctuations of other staples. This is essentially the position American cake and meal maintain abroad. It would be superfluous to add a similar order of things is of equal necessity here, which with energetic action on the part of the manufacturers is attainable. Exports: 600 tons meal to Hamburg, New Orleans loading. Receipts at this market, 2196 bags meal. Quotations are unchanged.

Cottonseed-Oil Notes.

THE Gainsville Cottonseed Oil Mill & Gin Co., Gainsville, Texas, has voted to increase its capital stock to \$100,000.

MESSRS. J. H. GIBSON & Co's new oil mill at Calvert, Texas, has been completed, and is now running at its full capacity of fifty tons of seed per day. It employs about fifty hands.

THE Planters' Cotton Oil Mill, now being erected at Greenville, Miss., will be one of the most complete oil buildings in the country. The work on the entire plant is progressing satisfactorily.

THE International Cotton Oil Co., of Selma, Ala., received the first car of seed on the 3d inst. The plant is being vigorously pushed to completion. The exact date the mill will be put in operation has not yet been determined.

THE large plant of the Americus Oil Co., of Americus, Ga., will resume operations about the 15th inst. The first carload of cottonseed was received last week, and it is expected a full supply will be on hand to commence operations. It is stated that the company will increase its business this season from an output of 315,000 gallons of oil last year to more than 400,000 gallons.

THE Brownwood Cottonseed Oil Mill at Brownwood, Texas, has been improved during the summer, and the plant, which had a daily capacity of sixty tons, has been increased to ninety tons. The oil is refined at Brownwood and shipped to New Orleans. The plant last year shipped 350,000 gallons of oil, but this year the shipments are likely to be increased to over 400,000 gallons. The hulls and meal are fed to cattle at the mill.

THE cottonseed-oil mills at Houston, Texas, will nearly all be in operation this week. The National began work for this season on the 2d inst., and the Merchants & Planters' Cotton Oil Co. resumed operation last week. The Consumers' will begin in a few days, and the Southern Cotton Oil Co. will resume during the coming week. Receipts of cottonseed have not been heavy, seventy-five to 100 carloads having been received so far this season. The Houston mills are paying \$5 per ton for seed delivered on cars at the point of purchase.

THE adjourned meeting of the committee on organization of the cotton-oil branch of the Houston Cotton Exchange and Board of Trade met at the exchange in Houston, Texas, last Friday. A number of gentlemen were present, representing the cottonseed-oil-mill interests of Houston and other places, and a general discussion of plans for organization took place. It was resolved "that the president of the Houston Cotton Exchange be requested to invite officers or executive committee of the Texas Cottonseed Crushers' Association to meet the Cotton Exchange board of directors in Houston at as early a date as possible." A number of gentlemen, representing oil mills or other cottonseed interests, were elected members of the Houston Cotton Exchange and Board of Trade.

Never Had Such Demand for Land.

Mr. J. Walter Hosier, Suffolk, Va., who is selling farm lands in Tidewater and Eastern Virginia, in a letter ordering an addition to his advertisement in the *Southern States* magazine, says:

"I have never had so many correspondents from any one advertisement in all my life. It is remarkable what good you are doing."

Why not follow Mr. Hosier's example and advertise your town or your property in the *Southern States* magazine, published by the Manufacturers' Record Publishing Co., Baltimore, Md.

THE schooner St. Thomas was loading 1000 tons in sacks of ground phosphate at Fernandina, Fla., on the 5th inst. for Baltimore.

PHOSPHATES.

Phosphate Markets.

OFFICE MANUFACTURERS' RECORD, BALTIMORE, September 12.

In the local market the volume of business shows no expansion, and sales have been light during the week. Manufacturers in the city are not buying freely, and what business has been done comes from out-of-town buyers. Reports from producing points in South Carolina are more satisfactory, and the work of development is being pushed with vigor by both land and river miners. The market is very steady at \$3 for crude rock, \$3 50 for hot air dried and \$6.50 for ground rock, all f. o. b. Charleston. In Florida shipments are expected to be larger for the present month than August, but many of the mines are still closed down awaiting better prices. Prices are wholly nominal, and for 60 per cent. river pebble delivered at Eastern ports 8 to 8 $\frac{1}{2}$ cents per unit is quoted, and for land pebble 8 $\frac{1}{2}$ to 9 cents per unit. The following arrivals are reported in the local market: Schooners C. A. McGilvery from Bull River, S. C., with 500 tons crude rock; Merom from Port Royal, S. C., with 1000 tons, and Wandering Jew from Punta Gorda, Fla., with 900 tons. The local charters reported are the schooners Adel Ball, City of Philadelphia and C. L. Godfrey, Ashley river to Wilmington, Del.; Blanche Hopkins, Port Royal to Baltimore, and Talofa, Tampa, Fla., to Cartaret, N. J. In New York there is only a limited inquiry for full cargo sail tonnage, and rates for phosphate are steady. The following charters are reported: A British steamer, 1264 tons, from Fernandina to Stettin at 18/6; a British steamer, 1549 tons, from Fernandina and Charleston to the United Kingdom or Continent on private terms, chartered abroad, and a British steamer, 1184 tons from Tampa to Stettin at 19/, chartered abroad.

FERTILIZER INGREDIENTS.

The tone of the market during the past week has been quiet, but steady, with very little local business reported. There has been a fair demand for blood, and rather more inquiry from the Southern market. In the West business is more active, with prices firm and stocks of blood and tankage light. Blood is still quoted \$1.65 to \$1.80 f. o. b. Chicago. Nitrate of soda in the local market is quiet and firm. Sulphate of ammonia is steady at quotations. The fish catch is only half of last season's product, and Northern factories are holding at \$20 for dry and \$11 for acid f. o. b. factory.

The following table represents the prices current at this date:

Sulphate of ammonia, gas.....	\$2 75@	\$2 80
Sulphate of ammonia, bone.....	2 65@	2 70
Nitrate of soda.....	1 77@	1 80
Hoot meal.....	1 80@	—
Blood.....	1 85@	1 90
Azotine (beef).....	1 75@	1 80
Azotine (pork).....	1 80@	—
Tankage (concentrated).....	1 60@	—
Tankage (9 and 20).....	1 70 and 10	—
Tankage (7 and 30).....	17 00@	17 50
Fish (dry).....	20 50@	—
Fish (acid).....	15 00@	—

CHARLESTON, S. C., September 9.

The past week has developed considerable spirit in the fertilizer and phosphate markets. A better tone prevails throughout, and there is more confidence in the business of the coming season. The coastwise shipments of rock for the week have picked up, and inquiries and sales denote a general waking up in the business. Many of the fertilizer factories that have been closed down since May will resume operation by October 1. The Standard Fertilizer Co., owning the plant and property of the old Royal Fertilizing Co., is purchasing materials, and will commence manufacturing at an early date. The rock miners are active and making a good showing, despite low prices. The river mining companies continue to mine large quantities of rock, and shipments to European ports are in-

creasing. Prices are \$3 crude, \$3 50 hot-air-dried and \$5 ground rock, all f. o. b. Charleston. Shipments by water for the week were: H. B. Hussy, 850 tons phosphate rock for Cartaret, N. J.; The Josephine, 980 tons phosphate rock for Baltimore, Md.; N. W. Howlett, 825 tons phosphate rock for Baltimore, Md.; A. E. Ketchum, 520 tons phosphate rock for Wilmington, Del.; A. B. Bacon, 515 tons phosphate rock for Wilmington, Del.; E. C. Ross, 575 tons phosphate rock for Wilmington, Del.; Mary Curtis, 500 tons phosphate rock for Richmond, Va. In port and loading are M. J. Lawrence, I. T. Campbell and S. B. Marts. The shipments by water since September 1, 1895, were 2202 tons, against 2040 tons for same date last year.

Phosphate and Fertilizer Notes.

THE shipments of phosphate from Fernandina for August were the smallest of any month this year, being 3510 tons. The predictions for the month of September are that 15,000 tons will pass through that port.

MESSRS. J. M. LANG & Co. report the following shipments of phosphate rock through the port of Savannah for the month of August by B. Arentz & Co.: Steamship Cydonia for Gothenburg with 1502 tons; steamship Marina for Memel, Germany, with 2154 tons, and steamship Robinia for Hamburg with 1002 tons—total for the month 4658 tons.

THE shipments of phosphate rock from Charleston to domestic ports for the week ending the 6th inst. were as follows: Schooners H. E. Hussey, 850 tons to Cartaret, N. J.; Josephine, 780 tons to Baltimore, and Nellie W. Howlett, 825 tons to same port; previously shipped this season, 1035 tons to Wilmington, Del., 590 tons to Richmond, Va., and 577 tons to Seaford, Del.

THE meeting of the Florida Phosphate Miners' Organization which was to have been held in Ocala, Fla., in September has been postponed, owing to the absence in New York of a prominent member of the executive committee for the purpose of securing additional capital for the enterprise. At the meeting in October it is thought a proposition will be submitted for the perfection of suitable plans for the thorough consolidation of the interests involved.

THE shipments of phosphate rock through the port of Punta Gorda, Fla., during the month of August were as follows: Steamship Rita for Newport, Monmouth, with 2574 tons; steamship Francisca for Belfast with 3024 tons; steamship Vedmedale for Hamburg with 2880 tons, and steamship Vivina for King's Lynn and Harwick, 4067 tons, shipped by the Peace River Phosphate Manufacturing Co.; barkentine Wandering Jew for Baltimore with 1029 tons by the Pharr Phosphate Co., and steamship Ernesto for Aberdeen and King's Lynn with 3539 tons by the Peace River Phosphate Manufacturing Co.—total 17,113 tons; previously reported in 1895, 41,735 tons—total 58,848.

THE Southern Fertilizer Association, recently organized at Asheville, N. C., elected the following officers and board of directors to serve for one year: President, W. A. Clark, Columbia, S. C.; vice president, Joseph Hull, Savannah, Ga.; secretary, H. M. Tucker, Jr., Charleston, S. C. The directors from the different States are as follows: Virginia, E. Sturdivant, Norfolk; S. W. Travers, Richmond; North Carolina, Henry Savage, Wilmington; Fred. Oliver, Charlotte; South Carolina, W. A. Clark, Columbia; G. A. Wagener, J. B. E. Sloan, W. B. Frost, G. Walter McIver, Charleston; Georgia, A. D. Adair, Atlanta; J. Rice Smith, Augusta; Joseph Hull, Savannah; R. J. Taylor, Macon; Alabama, O. C. Wiley, Troy; E. R. Tabor, Montgomery.

The commercial year has opened fairly active in the lumber and timber trade of this port, and while the volume of business is not expanding as it should, there is a more encouraging outlook for trade than usual. There has been during the past week a good inquiry from Central and South America, and considerable trade is expected during the fall from these sources. The exports of timber continue moderate, and shippers are not disposed to extend their operations until the present state of European markets is fully investigated. Latest advices are somewhat more encouraging; stocks are being reduced and prices are steady. There is a good demand here for the better grades of lumber and prices are a shade firmer. The saw mills adjacent to this city are now fully engaged and stocks are generally well assorted. During the week the receipts of lumber have been moderate, while shipments have not been as heavy as usual. The local building demand, which has been very active during the past year, is now showing every indication of a greater work during the fall and winter. It is stated that the increase in the building trades during the past year in this city has amounted to almost a boom, some 300 new buildings of all descriptions having been erected. The clearances of lumber and timber during the past week were as follows: Bark Callixene for Cardiff, Wales, with 77,455 cubic feet of hewn timber, 4113 cubic feet of sawn timber and 37,500 superficial feet of lumber; the bark Minden cleared for Queenstown, Ireland, with 63,623 cubic feet of hewn timber, 8266 cubic feet of sawn and 28,830 superficial feet of lumber; bark Guidaus cleared for Cape Town, Africa, with 15,800 feet of lumber and 34,105 cubic feet of sawn timber, and the steamer Columbia for Boca del Tora with 30,000 feet of lumber. In freights lumber is quiet, with rates steady at \$5.50 to \$6 to the West Indies and coastwise, \$10 to \$11 to River Platte and \$7 to \$7.50 to Mexico. Timber freights are quiet at 27/ to 29/ per load to the United Kingdom for hewn, and 90/ to 95/ per standard for sawn. Among the lumber charters reported in New York last week from gulf ports were the following: A British steamer, 1552 tons, from Pensacola to Buenos Ayres at or about \$14, \$2 form; a German bark, 453 tons, from Apalachicola to Rosario, \$13, \$2 form; a British schooner, 249 tons, from Mobile to San Domingo City at \$7.50,

and a bark, 557 tons, from Mobile to New York at \$6.50.

Beaumont.

[From our own Correspondent.]

BEAUMONT, TEXAS, September 9.

A steady increase in the demand for lumber has been the rule during the past week, and the volume of business in the different departments of the lumber industry in this section is very satisfactory. Prices continue very firm, with every prospect of a further advance, and should the demand continue very active throughout October stocks will become somewhat reduced. The Journal in its review of the lumber market says: "There are no material changes in the market conditions this week, though the demand for nearly all grades and classes of lumber seems to be steadily increasing. It cannot be said, however, that the manufacturers are seriously confronted with the problem of getting more saw orders than they can conveniently fill, but the inroads on yard stocks are such as to present the possibility of a predicament in the near future, especially if October brings forth the business that is reasonably expected." There has been a steady inquiry and demand for timber, and several bills have been on the market during the week. Millmen are very decided in their views, and ask outside figures, which are readily paid by dealers. Stocks of shingles are light, and the demand is fairly active, with values steady. Among the improvements in saw-mill plants in this section, that of the Texas Tram & Lumber Co. is an important one. The mill of this company has undergone some extensive improvements and repairs, nearly all the platforms having been rebuilt, and a lumber sorter is nearing completion, with an addition of more skidways. The work of construction on the new band-saw and shingle mill of the Long Manufacturing Co. is progressing rapidly, and operations will be commenced on October 1. When completed, this plant will be among the finest in this section of Texas, all the machinery being adapted for manufacturing the highest grade of lumber. The export business at Sabine Pass is expected to be largely increased during the fall and winter months, and already the Export Lumber Co. has numerous inquiries and a fair demand from Mexico and other points. The lumber market at Orange is in a satisfactory shape, and at Lake Charles and Westlake, La., business is active and mills all well supplied with orders.

St. Louis.

[From our own Correspondent.]

ST. LOUIS, MO., September 9.

The market continues to improve, and the movement in lumber during the week under review has been quite active. There seems to be now no doubt that the fall will witness the largest business ever transacted in lumber in one season. Lumbermen in all branches are very much encouraged by the present outlook, as the demand for material is very decided and prices firm and advancing. The yellow-pine trade has been very heavy during the past week, and country dealers pay the advance in prices readily. The following figures will give an idea of the improvement in the condition of the lumber trade in this market during the month of August. The report shows that there were 5305 cars of lumber received by rail and 1,632,000 feet by river. For the same month last year the receipts were 3720 cars and 1,047,000 feet. The shipments were 3512 cars, and 2794 cars for the same month last year. It is stated that the number of orders at the mills is greater now than at any other time this year and continue to come in freely. Stocks at various mills continue to decrease, and in many cases the assortment of grades and dimensions is considerably broken. There is a very satisfactory movement in white pine, the volume of orders expanding

each week. Receipts by river are quite liberal and stocks are well assorted, with prices firm and advancing. A meeting of white-pine yardmen was held on the 3d inst. and prices discussed, so that it is highly probable that an advance of \$1 per thousand may be made this week. A number of rafts of white pine are reported on the way down the river. The Eau Claire-St. Louis Lumber Co. has about 6,000,000 feet on the river due within the next ten days. The F. C. Luchmann Hardwood Lumber Co. of this city has leased the mill of the late firm of William Towle & Co., of Metropolis, Ill., and will put it into immediate operation sawing oak. The mill has a capacity of about 50,000 feet a day.

Lumber Notes.

THE A. J. Neimeyer Lumber Co., of Waldo, Ark., has been incorporated; capital stock \$150,000; capital in Missouri \$12,000.

THE Texas Tram & Lumber Co., of Beaumont, Texas, closed down its saw mill last week for a period of ten days in order to put in a new lumber assorter.

THE furniture store of L. R. Peck & Co., of San Antonio, Texas, was destroyed by fire last week. The loss on stock is estimated at \$70,000; insurance \$50,000.

THE Hamilton Building Co., of Kansas City, Mo., has been incorporated; capital stock \$25,000. The incorporators are S. Lathrop, Charles W. Bliler and E. P. Bates.

H. T. KENNON, president of the Kennon Manufacturing Co., of Brunswick, Ga., has leased the large lumber mill and property owned by John R. Cook. In future the mill will be operated regularly.

THE Alabama City Furniture Co., near Gadsden, Ala., will send a fine exhibit to the Atlanta Exposition. A hand-carved table will be entered for a premium, the hand work upon which cost \$150.

THE large planing mill of the Portsmouth Lumber Manufacturing Co. is running as usual, and the burning of their dry-kilns will not prevent them from filling all orders received. The work of rebuilding the dry-kilns has already commenced.

THE Reliance Sash, Door and Blind Factory, at Beaumont, Texas, is constructing two doors that are to be sent to the Atlanta Exposition as a part of the Texas exhibit. These doors are being made of the highest-grade yellow pine and cypress.

THE large saw mill and planing mill of Julius Levin & Co., at Levin Station, near Alexandria, on the Houston, Central Arkansas & Northern Railway, was destroyed by fire on the 6th inst. The loss is estimated at \$60,000, and only partially insured. The mill will be rebuilt at once.

THE Cape Fear Manufacturing Co. has been organized in Greenboro, N. C., for the purpose of manufacturing all kinds of building material and dealing in rough and dressed lumber, shingles, etc. The officers are O. R. Cox, president; W. C. Bain, vice-president; John A. Hodgins, secretary and treasurer.

THE shipments of lumber from Fernandina, Fla., during August amounted to over 300,000 feet, of shingles 290,000, and cross-ties 14,613. The Mallory Line steamer for New York cleared during the past week with 275,000 feet of yellow-pine lumber and 175,000 shingles, and the schooner S. B. Hubbard for New Haven with 330,000 feet of lumber from the Drew Lumber Co.

THE new band-saw and shingle mill of the Long Manufacturing Co. at Beaumont, Texas, is nearing completion, and operations will begin by October 1. The capacity of the shingle department will be much larger than the old mill, a 10-cut machine being one of the most important additions. The machinery for the band-saw mill has been especially selected for manufacturing the highest grades of lumber.

THE Carolina Cooperage & Veneer Co., of Wilmington, N. C., has added about \$30,000 to its capital and is erecting a new factory in that city. Mr. L. H. Vollers has the contract and has commenced work on the building. It will be 120 feet long, sixty feet in width and two stories high. Additional machinery with the latest improvements will be put in. The company manufactures barrels and veneer crates and baskets.

THE shipments of lumber through Brunswick last week are reported as follows: Schooner Rebecca F. Lamdin with 356,000 feet and the schooner Elisha Gibbs with 310,000 feet, both for Providence, R. I. The schooner H. J. Cottrell cleared for Boston with 292,000 feet. The schooner Luther M. Reynolds with 110,000 feet of lumber sailed for Union Island to complete her cargo. The bark Stephen G. Hart was loading lumber for Providence, R. I., and the bark Henry Norwell for Boston.

AMONG the clearances of lumber cargoes from Jacksonville, Fla., last week the following vessels were reported: Steamship Iroquois for New York with 200,000 feet of yellow-pine lumber and other cargo; steamship Algonquin with 450,000 feet of yellow-pine lumber and 2000 bundles of shingles, and the Seminole with 300,000 feet and 2700 bundles of shingles with other cargo. The schooner Robert W. Dasey cleared for Philadelphia with 120,000 feet of cypress lumber and 150,000 feet of yellow pine, and the schooner Edward W. Young for Plymouth, Mass., with 325,000 feet of yellow-pine lumber.

THE lumbermen of Texas, Arkansas, Louisiana and Missouri met in Texarkana, Texas, on the 6th inst. in convention. There were thirty mills in Texas represented, fifteen in Arkansas, five in Louisiana and five in Missouri. Mr. George W. Faulk, of Arkansas, was selected chairman and Mr. R. E. Kelley, of Beaumont, secretary. A prominent topic of discussion was that of proper grading and sizing. A number of differences existing in the association were adjusted. The meeting was in all respects harmonious and every representative present from the Arkansas line to the Sabine and Lake Charles reported that he was well supplied with orders at the advanced prices.

Wise Men

read the advertising pages of the MANUFACTURERS' RECORD carefully because they are always sure to find something of value; it may be a special sale, or an opportunity for investment, or some new machinery, or some one looking for a location for a factory, or a thousand and one things advertised that may concern you. Every man ought to study newspapers, not simply glance over them, but examine in detail the MANUFACTURERS' RECORD, for instance, and he will be sure to find something that can be made profitable in his business. In its news columns and in its advertising pages he will find matter that may prove invaluable in his business operations.

A BOOK FOR YOUNG MEN.—Edward Bok, the editor of the Ladies' Home Journal, has written a book for young men called "Successward: A Young Man's Book for Young Men," which the Revells will publish in a fortnight. The book aims to cover all the important phases of a young man's life—his business life, social life, his amusements, religious life, dress, his attitude toward women and the question of his marriage. This is Mr. Bok's first book.

Georgetown, Texas—Georgetown Cotton Oil Mills: "The cotton crop is very short in this section, is maturing rapidly and will be gathered early. Low price of seed also has tendency to make farmers hold them back. Mills anticipate short runs."

Need of Improved Agricultural Methods.

NASHVILLE, TENN., August 28.

Editor Manufacturers' Record:

In your issue of August 23 there is an article headed "Agriculture Pays in the South," to which should have been added, "if intelligently conducted." How often do you hear the remark "I know all about farming" uttered in many instances by a man engaged in some mercantile or other pursuit, and he thinks he convinces his hearers of the fact by stating "I was raised on a farm." Much of the farming as conducted in the South is nothing more than the unsystematic, unintelligent and spasmodic expenditure of brute force. The average Southern farmer comes to town in the spring, expends the munificent sum of \$1.50 for the purchase of a cast plow, carries it to what he is pleased to term his home, attaches a \$15 pony or diminutive mule rigged out in a \$1.25 set of gear, and proceeds to "make a crap." But he only succeeds in butchering God's footstool, marring the beauty of the surrounding landscape, insulting God and making the angels weep by calling it farming. Such a class of people will never build up the South or any other section of the globe. As Rev. Sam Jones has said, the average farmer knows as little about the constituent parts of his soil as the mule in front of him. Take the present corn crop, estimated at 82,000,000 acres, with an estimated yield of over 2,000,000,000 bushels, and take the Department of Agriculture's statement in bulletin No. 21 of the value of the nitrogen, phosphoric acid and potash taken from the soil by 2000 pounds of corn, i. e., the manurial value, it is put at \$6.75—a very conservative estimate—and study what it means. This is only one crop. Another item of interest in the same bulletin is the value of the fertilizing constituents of the manure produced by the horses, cattle, sheep and swine of the United States, a very large portion of which is lost by leaking and evaporation, whereby the air we breathe is poisoned, and diseases directly traceable to the inhalation of impure air are largely on the increase. The question of health and agriculture and their close relation are two subjects of vital importance and but little understood, and it occurred to me that if the MANUFACTURERS' RECORD would take up the matter and present to its large body of intelligent readers the urgent necessity for the adoption of more intelligent methods in farming, and show the great benefits that would certainly result therefrom, our people would be set to thinking; and as thought begets inquiry, observation and study, with knowledge as the result, other industries would feel the quickening influence of improvement as well, and factories would be established all over the South.

The Atlanta Exposition will be of incalculable benefit to the South, and the one to be held in this city next year will be a revelation to the world. CHAS. WALLACE.

Molasses as Stock Feed.

A new way of disposing of molasses, which accumulates in such quantities in the Louisiana sugar districts, is to use it as feed for live-stock. A Texas cattle-feeder offers to purchase large quantities of the molasses to combine with cottonseed hulls for cattle feed. The combination is effected in such a manner that the feed may be actually baled and shipped, it is claimed. By the use of the hulls and molasses it is said that the process of fattening is more rapidly accomplished.

THE Chamber of Commerce and the Young Men's Business League of Pensacola, Fla., are to form an improvement company to aid in locating factories in the city. A committee will try to secure \$25,000 in stock subscriptions for this enterprise.

MECHANICAL.

New Heavy Molding Machine.

The accompanying illustration is a faithful representation of a late type of heavy molding machines which has been introduced by J. A. Fay & Co., of Cincinnati, Ohio, to meet the demand for a molding machine that may be used for working all styles of moldings, flooring, ceiling, siding, casing, etc., in a rapid and accurate man-

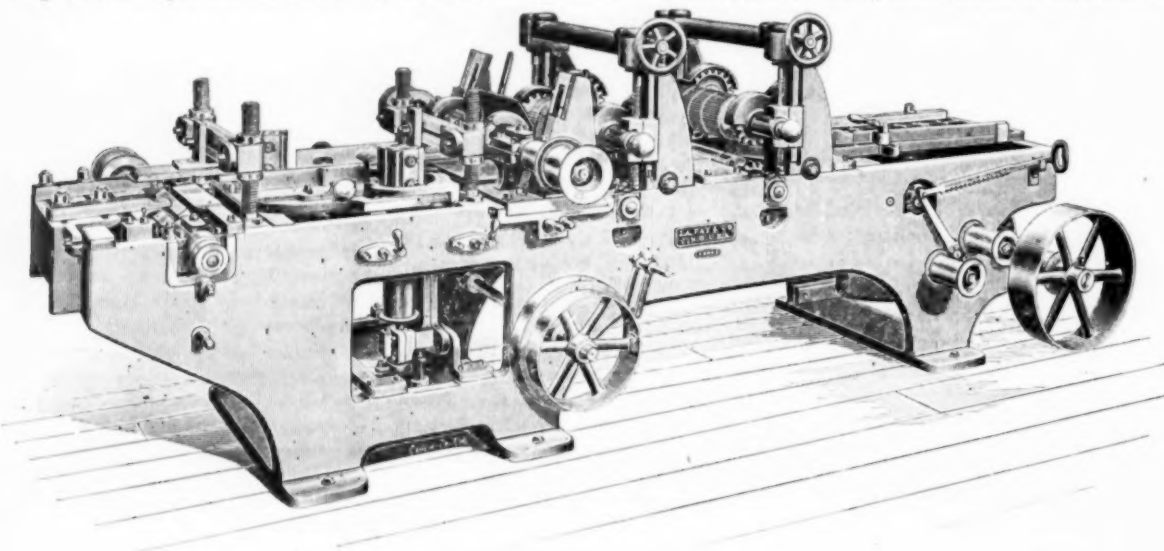
eleven sixteenths inches in diameter where the heads are applied, and usually furnished with solid forged cutterheads, slotted on four faces. They are hung in heavy independent frames, so arranged that one cut comes in advance of the other. They are adjustable across the bed and have also a vertical and angular adjustment. The left-hand head is fitted with the Fay new and improved weighted matcher-clip, designed to produce a uniform pressure on the material under all conditions. The side guides

of advanced ideas and progressive policy to consent to such a project. On account of the raising of the tracks of the Providence division of the N. Y., N. H. & H. R. R. Co. between Westchester Park and Forest Hills Station, in Boston, Mass., the Sturtevant Blower Works, at Jamaica Plain Station, had to arrange for moving one of its largest factory buildings. This building was 350 feet long by fifty feet wide; about one-half the length of this building is three stories in height, the other

the main line of shaft. On this floor was erected a reel of wire, one end being connected to the motor and the other end to the generating set in the engine-room, and as the building was moved away from its original place and from the power plant, the wire was unreeling, and in this way an electric current was furnished for the driving of the motor at all times during the moving of the building.

This building is 175 feet long, fifty feet wide and three stories high, with brick walls twenty inches thick at the first floor and sixteen inches thick at the second floor, with a heavily timbered and monitor roof. None of the tools nor stock or work in process were removed from the two upper floors. It is believed that this building is one of the largest and heaviest buildings ever moved in New England.

The moving was accomplished in the ordinary way by means of ten horses, connected with capstans, and ten sets of rope and blocks. It was at first contemplated to move it with rods and turnbuckles, but it was found that even after they had been made large enough to withstand the strain that the process was too slow. The progress with the turnbuckles was only about thirteen feet in ten hours, but with the final arrangement the best progress was something like sixty feet in one day. Before moving the building it was tied together lengthwise and crosswise by heavy iron rods, and had blocking and rolls placed under the side and end walls and under the centre posts. The whole building was moved without any injury, although the last part of this journey of 200 feet was over filled ground. The other end of this building will be moved in a similar manner, except that the distance is shorter, but the machinery and shafting will be kept running at all times by means of motor and similar connection, the old power plant being left until the last thing, and the new power plant being built at another place during the progress of this



NEW HEAVY MOLDING MACHINE.

ner It will work material from three-eighths of an inch to six inches in thickness, and up to thirteen inches in width, dressing all four sides at one operation.

The frame is made with plate sides, all joints planed and accurately fitted, holes bored and tapped to templates, and it is claimed to be the most powerful and perfect working inside molder made.

The feed consists of four large fluted feed rolls seven inches in diameter, powerfully geared by the Fay double expansion gearing, and weighted and placed in the machine before the cut. They are arranged in sections as regularly sent out, but can be made solid, fluted or smooth, as desired, and the shafts can be drawn out for the purpose of changing from fluted to smooth rolls, or vice versa, and can be instantly lifted from the work for the purpose of withdrawing it or stopping the feed, the mechanism not being shown in the cut. Two speeds of feed are supplied, viz, thirty feet and fifty-three feet per minute. A binder operated from the feeding end controls the feed.

The cylinders, with their journals, are made of solid forged steel, slotted on their four faces, and provided with chip-breaking lips for cross-grained lumber. The upper cylinder has journals two and a-quarter inches in diameter, and is arranged with two pulleys fitted with taper bearing and secured by a nut. It has an endwise movement for securing accurate adjustment of the cutters to the work without disturbing them after once being set. The lower cylinder has journals two and a-quarter inches in diameter, and is arranged to belt with one pulley. It has an endwise movement for convenience in adjustment and a vertical movement for regulating the depth of cut.

The cylinder bearings are very heavy, long and lined with superior lining material. Those of the upper cylinder are cast together and planed to fit upright stands cast solid to a bedplate extending across the machine. The lower head is supported in an independent frame. An automatic pressure bar is placed before the cut, arranged so that its edge can be brought close to the cutters. The bar after the cut of the upper cylinder and the bar before the cut of the lower cylinder have sectional clamping feet for holding down the work.

The side cutting spindles are one and

for the right-hand side cutterhead are equipped with movable throat pieces.

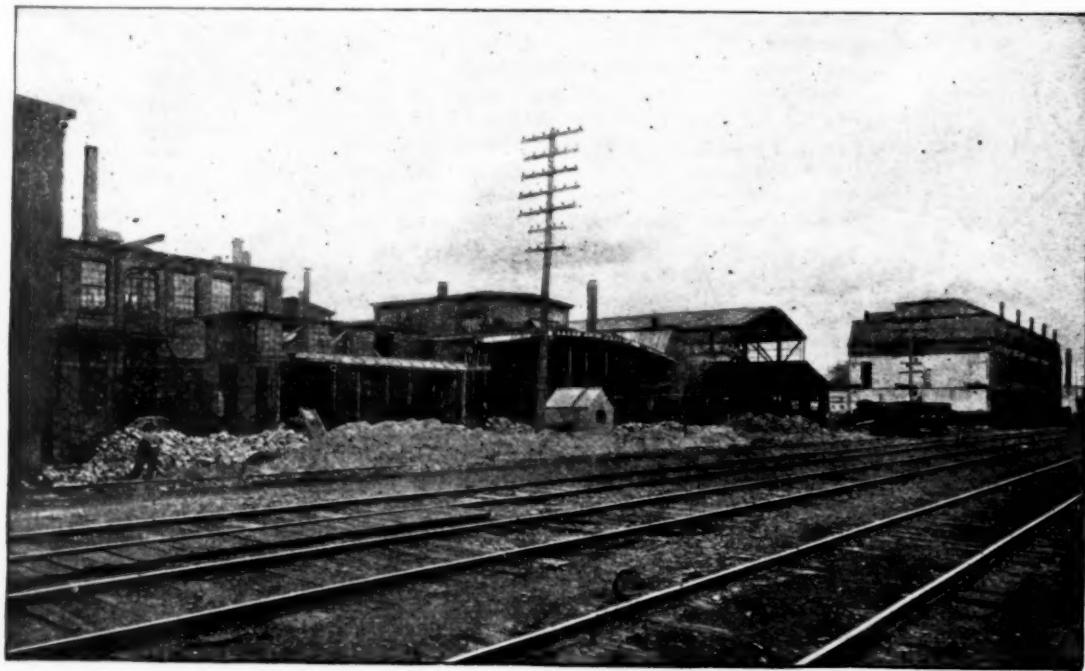
There is a shop number on each machine and a number on each casting by which they may be identified.

With each machine are sent four 13½-inch knives on each upper and lower cylinder, two six-inch knives on each side cutterhead and one set of wrenches. Shimer matcher heads can be furnished with the machine at a small additional cost.

The countershaft carries tight and loose

half two stories high. The three-story part of the building had to be moved a little over 300 feet to the south and then fifty feet to the east; the other half of the building is to be moved to the east fifty feet, or its width. A small portion only of the centre, where the power plant is now located, will be torn down and the new power plant erected.

An interesting part of this work to the electrical interests in particular is the fact that the work in the three-story building



A REMARKABLE FACTORY MOVING.

pulleys 12x8 inches that should make 900 revolutions per minute.

A Remarkable Factory-Moving.

Moving a large factory building without shutting down the operations of the plant is a feat in the industrial life of today that exemplifies the possibilities of modern mechanics. Despite the ingenuity and apparently limitless ability of the up-to-date contractor to carry out seemingly impracticable undertakings, such an achievement as this called for more than the usual exhi-

was carried on during the entire time while the building was being moved, except on the lower floor, which being laid on the ground necessitated the removing of all the tools from that floor. The second story, in which a part of the smaller steel-plate blowers are made and tested, and the upper story, in which blast wheels and other blower appurtenances are built, were kept running all the time during the moving process. An electric motor of about twenty horse-power was located on the second floor of the building and belted to

moving.

It is believed that this is the first instance of any building being moved and the work continued in it at all times. Especially interesting is the fact that the building is so large and heavy and has been successfully moved, and that the company has been able to continue work under such conditions, which would not have been possible, except by means of electricity.

The illustration herewith shows the three-story building at a point about 305 feet south of its original location, and plainly

shows the wire running between the powerhouse on the left and the three-story building. As this three-story building formed one side of the blacksmith shop and the large blower shop, the new front will be built on these latter buildings. The picture was taken at the time when the three-story building was being reloaded, prior to being

per pound of carbon, an efficiency of 80 per cent. is equal to an evaporation of twelve pounds of water from and at 212 degrees per pound of combustible.

Among the firms that have devoted their special attention to the construction of a thoroughly practical boiler is the Hogan Boiler Co., of Middletown, New York,

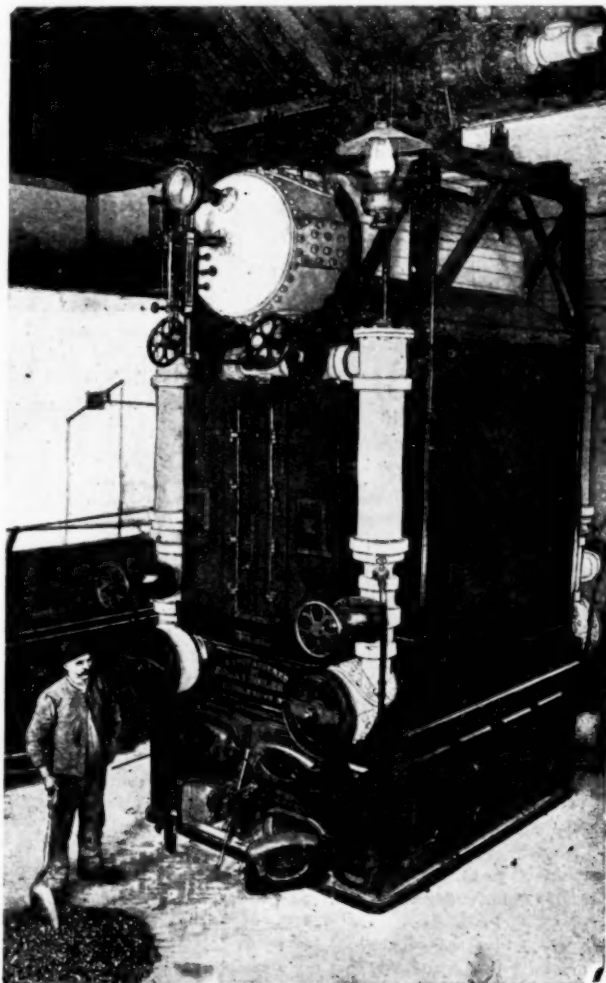


FIG. 1 — THE HOGAN BOILER.

moved back on to the new foundation which is prepared for it behind the foundry building.

When the plant of the Sturtevant Blower Works is fully rearranged, the entire length of the buildings will be about 900 feet along the railroad track, with a width of about 200 feet, covering a floor space of about seven and a half acres.

As this company is very busy at the present time, the moving process is arranged so that no shut-down of any great length of time will be made in any department.

The Boiler of Today.

Of late years a point to which great attention has been directed is the construction of a boiler which shall secure the greatest possible economy in fuel. Of the total heat which the fuel placed in the furnace is capable of supplying by its combustion, part may be wasted by an incomplete burning of the fuel, producing cinders or smoke or unburnt gases; another part is always lost by radiation and conduction, and a third portion is carried off by the hot gases that escape from the boiler flues. Many contrivances have been adopted to diminish as much as possible this waste of heat, and others have been introduced to obtain the greatest possible proportion of available steam-power for a given weight of fuel.

Many years ago boilers were made which have given results equal to about 80 per cent. of the theoretical efficiency of the fuel. As the chimney gases carry off as a minimum about 15 per cent. of the heat of the fuel, the losses due are generally not less than 5 per cent., and it is readily seen that the margin left for further saving is extremely slight. As a pound of pure carbon is capable of generating 14,500 thermal units, equivalent to an evaporation of fifteen pounds of water from and at 212 degrees

U. S. A., which recently introduced a boiler with many specialties in itself to recommend it to the notice of our readers. The nominal horse-power of this boiler is 100, and it has twenty-six feet of grate surface, while there are 833 square feet of heating surface, of which 811 square feet are in the tubes. The manufacturer claims that the boiler has an evaporation of about seven to eight pounds of water per square foot of heating surface. In course of time it is anticipated that this high evaporation will even be exceeded, as the power of this particular boiler is said to be only limited by the amount of fuel consumed on the grate. Some British makers of small tube boilers claim an evaporation of from twelve to seventeen pounds of water per square foot of surface, with ten to twelve inches of draft pressure. The Hogan Boiler Co., however, considers that it is justified in claiming that, for land use, they produce the lightest boiler in the largest unit, with the smallest unit of parts, with the lowest number of joints, occupying the smallest floor space, and evaporating the greatest quantity of water with one pound of coal.

Among some of the conditions of design adhered to in this manufacture may be mentioned the presentation of the fire and gases to the heating surfaces. The heating surfaces are above the fire, excepting the furnaces forming the outside wall of the first return flue. The gases are in large volumes around the heating surfaces. On account of these large volumes the temperatures of the gases are maintained, and not reduced as when passing or forced through narrow orifices and passages. Steady production of steam, it is explained, is only possible where the heating surfaces are surrounded by a large non-fluctuating volume of gases at uniform temperatures. The supply of water to the

heating surfaces by circulation and the introduction of feed water at low temperatures have been provided for in the design of this boiler. The method of introducing the feed water causes precipitation of foreign matter at the temperature of the water in the boiler before the incoming water comes in contact with the surfaces exposed to the fires and heated gases. The only object of circulation or motion of water in a steam boiler is to permit the water to absorb heat. The circulation or motion is relatively and actually slow, and will not clean the surfaces exposed to the heat. There is said to be only one way to keep the heating surfaces clean, and that is, to prevent all sediment and dirt from coming into contact with them. To the Hogan boiler two methods of introducing feed water are attached. They are known as the external and internal water inductors. On the external inductors valves are so arranged that the appliances within the inductor casing can be removed and cleaned when necessary without stopping the boiler. The external and internal inductors give identically the same economical results in operation, so far as the consumption of fuel is concerned. During the past four months water has, we are informed, been introduced in this boiler at from forty to forty-five degrees Fahr. constantly, day and night, with the external thermometer occasionally below zero, and sometimes reaching as low as fourteen degrees below that point, and yet no injury, it is stated, has occurred to any part of the boiler.

Tests of the Hogan boiler have, we are informed, proved in every sense of the word satisfactory. The report of a committee which had been specially formed to test the Hogan boiler demonstrates this. Very complete arrangements were at hand for measuring the feed water in a tank which was graduated to read in pounds of water. The temperature of the feed water was read from a thermometer inserted in

the boiler be started for a test of evaporation under forced draught to last thirty minutes. The blower was started accordingly at 2 23 P. M. The water in the feed tank at this time indicated 4600 pounds. The temperature was forty-four degrees Fahr. The steam pressure averaged during the test 120 pounds. The steam was allowed to escape through the safety-valve, also above the building. The pressure of the blast was not measured, we understand, owing to an unfortunate disarrangement of the gage, but in the opinion of the members of the committee was about one and a-half inches. No facilities were at hand either to make a calorimeter test of the steam, but one-inch pipe located on the top of the boiler was from time to time opened full and the steam examined. It appeared to be practically dry. The temperature of the terminal gases was not taken. At 2 53 the blast was stopped, and the pump, having been found unable to keep up with the demand for water, was allowed to run a few minutes longer in order to bring the water up to the mark. The fire was inspected and a little more coal put on to bring it up to what the committee considered was its condition at the start. When the feed pump was stopped it was found that the tank contained 2200 pounds of water, thus showing an evaporation of 2400 pounds of water in thirty minutes from forty-four degrees temperature into steam of 120 pounds. The coal used was 350 pounds, which gives an actual evaporation from and at 212 degrees of 8.35 per pound of coal. On this evaporation the boiler developed 168 horse-power. The evaporation of water per square foot of heating surface per hour was 7.02 as follows: Forty-eight hundred pounds of water evaporated from and at 212 degrees, x 1.125 factor of evaporation, 7.02 380 square feet of heating surface.

The "Hogan" boiler contained 830 square feet of heating surface and twenty-six feet

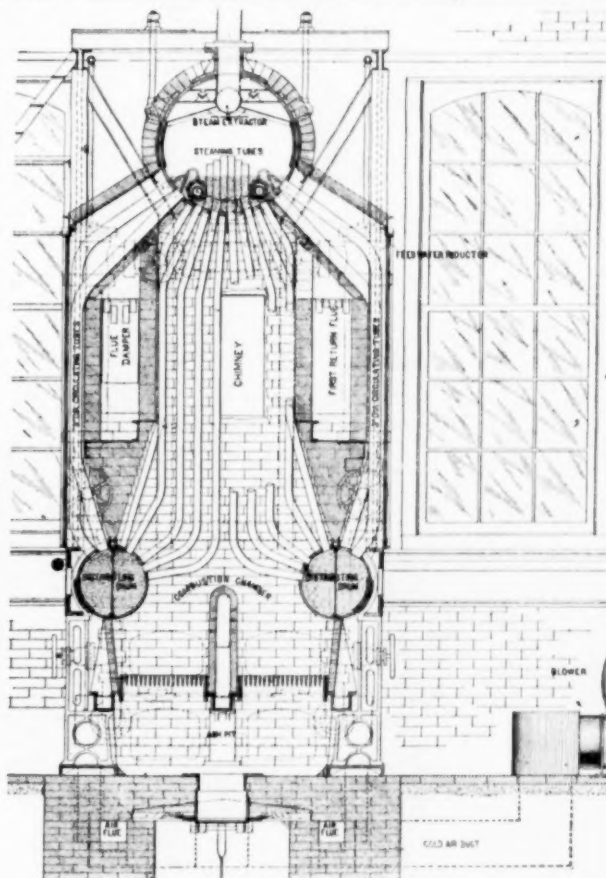


FIG. 2 — THE HOGAN BOILER.

the feed pipe. The steam pressure was recorded by an ordinary steam gage, and also by a recording gage. The coal, which was of lump anthracite kind, was weighed on a scale in the boiler-house.

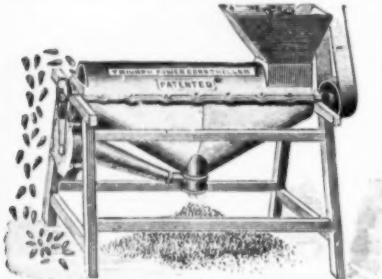
The members of the committee, having satisfied themselves as to the correctness of the conditions, and having examined the fire and the water level as indicated by the gage-glass on the boiler, directed that

of grate surface, and was rated by the company as a 100 horse-power boiler.

All things considered, the performance of this boiler was deemed very remarkable, and those present expressed themselves well pleased not only with the behavior of the boiler, but also with the general arrangement and mechanical construction of the boiler. Our illustrations include a cut showing cross-section of this boiler.

Triumph Power Corn-Sheller.

An especially complete and effective corn sheller is the "Triumph," illustrated herewith. This sheller consists of a horizontal cast-iron cylinder, to which are bolted wrought-iron bars, into which are riveted steel teeth. This cylinder runs in a perforated cast-iron shell; through the perforations the shelled corn passes into a sheet iron case, where a fan, or cleaner, removes all dust from the grain. The cobs are thrown out at the end opposite the feed. In the entire construction there are no springs, no gears, and nothing, it is stated, to get out of order. Running at full speed and a six-inch belt, this machine will shell



THE TRIUMPH POWER CORN SHELLER.

readily 2000 bushels of corn per day, but if desired to run with less power a narrower belt may be used, and the work performed will, it is said, be equally good, and it will shell wet or dry corn. It can be driven by either horse or steam power. The dimensions are as follows: Depth, two feet four inches; length, five feet three inches; extreme height, five feet two inches; size of frame on floor, three feet by six feet; pulley, nine and one-half inches by six inch face; speed, 600 to 800 revolutions per minute; weight, 500 pounds.

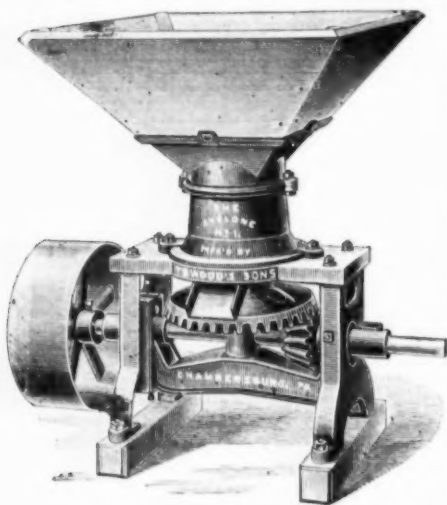
The Horton Manufacturing Co., Painesville, Ohio, is the manufacturer.

Cyclone Corn and Cob Crusher.

This machine, illustrated herewith, does not make meal, but is intended to reduce corn and cob together, so that it can be fed into burrs or rolls and by them ground into feed.

It is made of a superior quality of material, insuring long service of wearing parts, and will crush many thousand bushels before showing any signs of wear.

After years of service the grinding parts of crusher can be renewed at a small cost,



CYCLONE CORN AND COB CRUSHER.

and the machine will be as good as new again.

In putting this machine in the mill the services of a millwright are not necessary, on account of the absence of a large number of shafts, gears or pulleys to place in position. All that is needed is a pulley on some convenient line shaft, from which the crusher can be driven. The size of the pulley required on such a line shaft will depend upon the speed of the shaft and how fast it is desired to run crusher.

With a six-inch belt the capacity of the crusher is thirty to sixty bushels per hour, depending, however, entirely upon the speed at which it is driven.

It is geared three to one, so that 150 revolutions of the pulley on countershaft under crusher will make fifty revolutions on grinding parts of crusher, or 300 revolutions of pulley will make 100 revolutions of crusher.

A wood hopper twenty-eight inches square at top is furnished with each crusher.

A space of forty inches long by twenty-eight inches wide is all that is required in the mill for this machine.

The attention of millers, farmers and stock-raisers generally is called to the fact that while this crusher does not make meal, the product can be fed to cattle without grinding on burr, if so desired.

It is now a common practice to grind the cob with corn, as cattle eat this mixture readily, and the ground cob, in addition to its nutritive value, aids digestion.

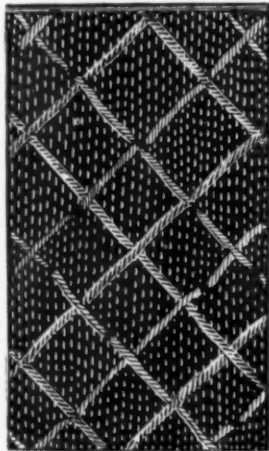
It is conceded that corn properly crushed will go from 25 to 50 per cent. farther than uncrushed corn, and cattle can be more quickly and economically fattened by using ground feed than by feeding the corn on the cob.

T. B. Wood's Sons, Chambersburg, Pa., are the manufacturers.

A New Style Rubber Belt.

The New Jersey Car Spring & Rubber Co., of Jersey City, N. J., which has won an enviable reputation in the manufacture of high-grade vulcanized rubber goods, such as belting, packing, hose, tubing, mats and matting, has put a new style of belt upon the market which bids fair to become very popular.

It is of entirely new design and manufacture, is constructed with the great care characteristic of all the company's products and is styled the "Gladiator" seamless quilt-stitched belt. As the name indicates, it is extremely strong and durable, is seamless and quilt-stitched, as shown in the engraving. It is in this method of stitching that it is distinctly original, and to it also



A NEW STYLE RUBBER BELT.

the belt owes its other attractive and superior qualities.

There is a recognized demand for a first-class stitched belt—one that will retain its strength, in which the stitching would not break and tear the belt with every-unusual strain, and, in a word, could be thoroughly depended upon to give continued satisfactory service.

In the Gladiator seamless quilt-stitched belt the belt is double-stitched, the lines of stitching being put in obliquely and crossing each other; in other words, the belt is "quilted." The merits of this method of stitching is apparent. In this way the strain upon the belt is more evenly divided and distributed in all directions, and there is said to be no liability of the stitches breaking to tear the belt and so weaken it; on the contrary, a network of cotton stitching is formed, each component part of which

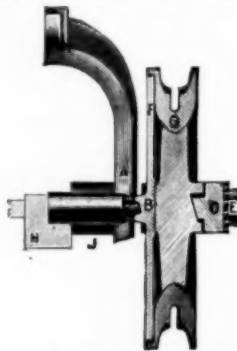
adds strength to the others and to the belt as a whole.

The manufacturer has perfected machines of special design for making these belts, and claims that in the "Gladiator" is offered what may be truly called a perfect stitched belt, having none of the usual objectionable features, but with every merit which a perfect belt of the kind should have, and with a degree of strength and durability not possible to secure by any other method of construction. A sample of this new style belt with full information will be sent free to all who apply for it at the main office and works of the company.

Automatic Pulley-Block Brake.

The utility of the Moore anti-friction differential-chain pulley-blocks is now well understood by those who follow the development of devices of this character. The points of excellence in this block are explained as follows:

First. The hand and lift chains are separate and independent. The lift chain, therefore, has such a slow movement as to avoid the great wear both on chain and sprockets which follows where one chain serves both as a hand and lift chain, and



AUTOMATIC PULLEY BLOCK BRAKE.

therefore travels under the full weight of the load from forty to 100 times as fast as in these blocks.

Second. The leverage is obtained by a gear and pinion movement. There is no end thrust of a worm shaft and no wear of a worm and worm-wheel. Every mechanic will admit the advantage thus gained in point of durability of the gear and pinion movement.

Third. The teeth in the pinion and annulars are of the same pitch; they fit without grinding or wedging. Anti-friction rollers are placed between the eccentric and pinion to reduce friction. By this arrangement the enormous loss by friction is almost entirely overcome.

An interesting and important feature of the Moore block is the automatic brake which is illustrated herewith. Its details

load loosens the wedge B and tightens the wedge D, while a pull on the hand chain to lower the load tightens the wedge B, but loosens the wedge D, one wedge counteracting the other and producing no friction between the plate and the frictional surface of the wheel at the point F. But when the hand-wheel G is in a state of inertia the pull of the load on the shaft tightens the wedge D, carrying with it the hand-wheel and friction plate, tightening also the wedge B, and the two wedges acting together set the frictional surfaces into contact and effectually lock the block. A pull on the hand chain in either direction releases one of the wedges, but as soon as the pull ceases the load instantly catches up and locks both of them. The lock is positive and smooth working, since the friction surfaces are really never out of contact, and heavy loads may be lowered by a pull on the chain of a very few pounds.

The friction plate, which has a wedging contact with the block frame at two points, the wedging clutch and the adjusting nut in connection with the hand-wheel constitute the entire brake mechanism, which is plainly very simple.

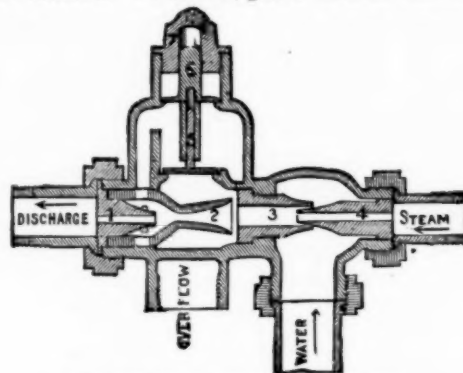
The adjusting nut is locked to the clutch by a small screw which passes between two of the projections of the nut. To make the block lower more freely this small screw is taken out and the nut turned one or two notches to the left. To make it lower less freely the nut is turned one or two notches to the right.

The friction surfaces are self-lubricating and require no oil.

These blocks are made by the Moore Manufacturing & Foundry Co., Milwaukee, Wis.

National Automatic Injector.

A section view of the National automatic injector is shown on this page. Its details are: 1, delivery tube; 2, combining tube; 3, lifting tube; 4, steam jet; 5, immediate cut-off; 6, overflow check; 7, overflow cap. Simplicity and durability are the features commended in this form of construction. By the aid of a double valve a high degree of perfection in operation is obtained and the life of the machine prolonged. The claim is made that this device does not need any adjustment from twenty to 125 pounds steam pressure, working water 130° hot, and will lift every time through hot suction pipe. The tubes are put in and out without a wrench, and lime cannot deposit on the case so as to prevent tubes from coming out. All parts can be duplicated without sending the machine to the factory. By means of double valves it grades one-half and works equally well,



THE NATIONAL AUTOMATIC INJECTOR.

and method of operation are as follows:

A friction plate F of slightly less diameter than the hand-wheel is mounted upon an extension of the hub of the hand-wheel and between it and the block frame A.

The friction plate has a wedging contact with the block frame at B, and the hand-wheel has a reverse wedging contact with the clutch D, which is keyed to the shaft and held in position by the adjusting nut E. A pull on the hand chain to raise the

taking water with a pressure, lifting up to twenty feet, according to surroundings. Its simplicity of construction is evidenced by the fact that the whole inside can be taken out in a minute. The reliable and efficient nature of the service rendered by this injector is brought out in the large number of testimonials received by the manufacturer, the National Brass Manufacturing Co., 108 Canal street, Cleveland, Ohio.

Iron Markets.

CINCINNATI, September 7.

At the close of the week the largest producer of Southern iron has withdrawn from the market entirely for this year on several grades, and on all others is restricting sales within narrow limit.

The heavy advance in prices on Bessemer and Southern pig iron last week, and the further advance of Bessemer this week, has had the effect to modify the excitement and retard heavy buying for the time, though the feeling of many is that the lull is a "breathing spell," both consumers and producers being disposed to avail themselves of an opportunity to take their earnings and reckon as to the outlook. The transaction of the past fortnight far exceed in tonnage and value the business of any corresponding period since the eventful boom '79 and '80.

The action of the Southern railroads in advancing freight rates to Ohio river points, 50 cts. per ton, operative 16th inst., was not a surprise, but the announcement being made simultaneously with the \$1 per ton advance in Southern irons has occasioned some irritation on the part of consumers, as it will occasion that much additional advance. The further notice from the roads that no protection is granted on a large bulk of orders previously entered places the Southern furnaces in a justly indignant and antagonistic attitude, as the greater number of the unprotected sales were made at unremunerative prices. Should the extraordinary plan be consummated, the furnaces will thus be arbitrarily handicapped with a further dead loss of 40 to 50 cents per ton.

A large number of furnaces in the North heretofore engaged on foundry and mill irons have been naturally tempted by the high prices of Bessemer and have become Bessemer producers. The stocks of Lake Superior coke iron are already the lowest known for several years, and should the demand for Bessemer be maintained, the South and Virginia will be called upon for a supply of foundry grades to an unusual extent.

There will be four or five Virginia and Tennessee furnaces blown in this month or early in October, but there will be no augmentation in the Alabama district, coke and ore supply being scarcely adequate for furnaces in blast.

Charcoal irons are now participating in the hearty appreciation of values, and several round lots have been taken at full \$2 per ton over figures of sixty days ago.

As will be observed, the greatest volume of business has come on Bessemer, basic and mill grades, and the prices prevailing on foundry grades are relatively low, and are in reality reasonable.

We revise our quotations as near as possible, in accordance with the market at its close:

Southern coke No. 1 foundry.....	\$12 50@	—
South. coke No. 2 foundry and No. 1 soft.....	12 25@	—
Lake Superior coke No. 1.....	14 50@	15 00
Lake Superior coke No. 2.....	14 00@	14 50
Hanging Rock charcoal No. 1.....	16 00@	17 00
Tennessee charcoal No. 1.....	13 50@	14 50
Jackson county silvery No. 1.....	14 00@	15 00
Southern coke, gray forge.....	12 00@	—
Southern coke, mottled.....	11 75@	12 00
Standard Alabama car-wheel.....	15 25@	16 25
Tennessee car-wheel.....	14 50@	15 00
Lake Sup'r car-wheel and malleable.....	15 50@	16 50

CHICAGO, September 7.

The most important event of the week was the purchase by a prominent steel company in this locality of a large block of Southern iron for the manufacture of steel by the open-hearth basic process. This is the first introduction of Southern iron or the manufacture of basic steel in this district, and it is looked upon as a very promising event for the future.

A considerable tonnage of Southern foundry and soft irons was booked for local parties. The inquiry continues brisk from the outlying country, although somewhat checked by the recent advance in prices. It is presumed, however, that as soon as consumers have time to catch their breath

further large orders will be placed. The scarcity of soft grades continues to be a source of anxiety.

Quite considerable activity was developed in Jackson county, Ohio, silvery irons, and several good sales were made at full prices. This is partly due to the scarcity of soft irons mentioned, and the expected advance in the latter.

All the surplus stocks of Lake Superior charcoal iron have been practically closed out, which fact has strengthened materially the market on this class of iron.

The Calumet furnace is expected to blow in next week on foundry and Bessemer iron.

L. S. C. C. active, with sales at full prices.

We quote for cash f. o. b. Chicago:

Lake Superior charcoal Nos. 1 to 6.....	\$14 50@	15 50
Ohio Scotch No. 1.....	15 50@	16 50
Jackson county, Ohio, silvery No. 1.....	16 00@	17 00
Alabama silvery No. 1.....	15 00@	15 50
Spathite.....	14 00@	14 50

We quote for cash f. o. b. St. Louis:

Southern coke No. 1.....	\$13 00@	13 25
Southern coke No. 2.....	12 75@	13 00
Southern coke No. 3.....	12 50@	12 75
Southern gray forge.....	12 25@	12 50
Southern charcoal No. 1.....	14 50@	15 00
Ohio softener No. 1.....	14 00@	14 50
Lake Superior car-wheel.....	15 50@	16 00
Southern car-wheel.....	16 00@	16 50
Genuine Connellsville coke.....	4 75	—
West Virginia coke.....	4 75	—

BUFFALO, September 7.

The past week has been one of active buying in local pig-iron circles, and the market has scored another advance, which is the first since the activity of a few weeks ago. This applies to both Northern and Southern brands, and the buying has been for prompt shipment. Prompt deliveries, however, continue to be the most difficult feature of the situation.

The general movement toward the manufacture of Bessemer pig has added to the scarcity of available foundry iron. One of the leading Lake Superior charcoal furnaces has been forced to close its order-book and decline further sales entirely.

We revise our quotations, which are on the cash basis f. o. b. cars Buffalo:

No. 1 foundry strong coke iron Lake Superior ore.....	—@	\$14 75
No. 2 foundry strong coke iron Lake Superior ore.....	—@	14 25
Ohio strong softener No. 1.....	—@	14 75
Ohio strong softener No. 2.....	—@	14 25
Jackson county silvery No. 1.....	—@	15 75
Lake Superior charcoal.....	—@	14 25
Southern soft No. 1.....	14 50@	15 00
Hanging Rock charcoal.....	—@	18 50

BOSTON, September 7.

The pig-iron market is in a more excited condition than it has been in at any time since the "boom" of 1879. Prices on Southern iron have recently been advanced 50 cents, to \$1 per ton, and it is plain to be seen that the top of the market is still far from having been reached. It begins to look as though it would be almost impossible to secure sufficient pig iron this fall to go around.

We quote for cash delivered Boston:

Alabama No. 1 foundry.....	\$14 50@	14 75
Alabama No. 2 foundry and No. 1 soft.....	14 25@	14 50
Alabama No. 3 foundry and No. 2 soft.....	14 00@	14 25
Alabama No. C. C. car-wheel.....	18 00@	18 50
Strong L. S. coke iron No. 1 foundry.....	16 50@	16 75
Lake Superior charcoal car-wheel.....	17 75@	18 00
American-Scotch (Northern) No. 1.....	16 50@	16 75
Jackson county silvery No. 1.....	17 50@	18 00

NEW YORK, September 7.

We have a fair run of small orders to report this week, ranging from carload lots to 200 tons. The outlook for the fall trade is good both for raw material and finished. With the exception of the advance in Alabama irons and in irons made from Lake Superior ores there is no change to report.

We quote for cash f. o. b. New York:

No. 1 X standard Southern.....	\$14 00@	14 25
No. 1 X choice Virginia, such as Shenandoah.....	14 00@	14 25
No. 2 X Alabama or Virginia.....	13 50@	13 75
No. 1 soft Alabama or Virginia.....	13 75@	14 00
No. 1 X lake ore coke iron.....	16 25@	16 50
No. 2 X lake ore coke iron.....	15 75@	16 00
Lake Superior charcoal.....	17 00@	17 25

PHILADELPHIA, September 7.

The rapid advances recently made in all kinds of iron that are sold in the Pittsburgh district have had a tendency to make the conservative buyers in this section hesitate in regard to placing new orders, particularly as most every one has covered their wants for the next three months. In the Susquehanna district all of the rolling mills report

that the demand for finished material has fallen off and that prices do not rule as high as they did two weeks ago; consequently the demand for mill iron is not quite as good as it was and sales this week have been confined mostly to foundry grades. The busiest people on the list are the manufacturers of bridges and structural iron and steel that enter into large buildings, etc. Many of these manufacturers report that they have work booked ahead that will run them away into next year. Consumption on the whole increases. In time prices will be regulated so that the difference in prices will not be so great, say for instance, between the Alabama district and that of their neighbors in Virginia. The same will also apply to lake ore irons made east of the mountains and those made west of the mountains.

We quote for cash f. o. b. Philadelphia docks:

No. 1 X standard Alabama.....	\$14 00@	14 25
No. 2 X standard Alabama.....	13 75@	14 00
No. 1 X standard Virginia.....	14 00@	14 25
No. 2 X standard Virginia.....	13 50@	13 75
No. 1 X Alabama or Virginia.....	13 75@	14 00
No. 1 X lake ore iron.....	16 25@	16 50
No. 2 X lake ore iron.....	15 75@	16 00
Lake Superior charcoal.....	17 00@	17 25
Standard Georgia charcoal.....	17 25@	17 50

ROGERS, BROWN & CO.

Heavy Orders for Boilers.

The books of the Stirling Boiler Co. show that this year's sales exceed those of any previous year in the history of the business. The contract made by the company for supplying the boiler equipment for the Atlanta Exposition has already been referred to in the MANUFACTURERS' RECORD. Prominent among the large plants recently erected are: 8000 horse-power for the West Chicago Street Railway; 2000 horse-power for the Detroit Railway Co.; 1500 horse-power for the Waltham Bleachery, at Waltham, Mass., and 2520 horse-power for the Edison Electric Illuminating Co., at Paterson, N. J. A 750 horse-power battery is in process of construction for the Diamond Match Co., to be shipped to Liverpool, and the company is also making a battery of boilers for the naval yards of the Japanese government at Yokohama. A 700 horse-power equipment, when completed, is to go to one of the large sugar plantations in Cuba. A 500 horse-power plant is now being installed at the Pabst Brewery, at Milwaukee. Armour & Co. have just placed their fifth order with the Stirling Company for a 400 horse-power, and the eleventh order has been received from the Simpson & Watkins colliery. This equipment is to be placed in the firm's colliery at Scranton, Pa.

TRADE NOTES.

THE American Tinplate Co., of Elmwood, Ind., is making extensive additions to its already large plant, and will be able to supply next year about five times the present output. It is adding quite a number of new machines to its repair shops, including a large upright drill made by the Lodge & Davis Machine Tool Co., of Cincinnati, Ohio.

THE American Ship Windlass Co., of Providence, R. I., manufactures, it is claimed, the smallest capstan in the country, and probably the largest also. Its smallest capstans for yachts and sailboats weigh only sixty-five pounds. These are made of iron or bronze and work with cranks. The iron capstans are galvanized, but have only one speed. The bronze capstans have two speeds, so that they give increased power by simply reversing the motion of the cranks without any other change. Its largest capstans weigh about 4000 pounds and are for naval vessels or for use on wharves for hauling heavy vessels up to the dock at great speed, and they work either by hand or steam as required. Between these two ranges there is an immense variety. The company claims to make the best capstans that are made anywhere in the world, and their good qualities are testified to in the opinions of experts in Great Britain as well as all over the world. The great beauty, however, of its product, the company states, is the fact that it can manufacture as cheaply as the cheapest and better than the best.

AN ingenious electrical device is being introduced for recording the position of a car on an electrical railroad and signalling to other cars whether the track is clear to the next switch.

This device is made by H. J. Wightman & Co., of Scranton, Pa. It is known as the Wightman block signal. The usefulness of this device for single-track railways and crossings has been demonstrated, and it is believed to supply a want long felt by street railway men. The mechanism is remarkably simple and strong in construction. The signals consist of a box containing the signal mechanism and two contact hangers located at each end of a stretch of single track. The signal mechanism consists of two solenoids—one connected to the "make hanger" for establishing, and one connected to the "break hanger" for extinguishing the signal. Within each single box are five incandescent lamps. When the signal is in operation two of these lamps are connected in series with the three lamps in the distant box. The lighting of the two lamps on one side of the box is a signal to the motorman that the track is clear and that he has the right of way. The appearance of three lights in the opposite half of the signal box indicates that a car is approaching from the opposite direction and the track is blocked. The small plungers within the solenoids are the only movable parts of the entire mechanism. The passage of the trolley wheel by the "make" hanger and "break" hanger establishes an electrical circuit which energizes either one or the other of these magnets, thus drawing up plunger and establishing the signal connection, or breaking it, as the case may be.

THE Goulds Manufacturing Co., Seneca Falls, N. Y., reports the following sales of its triplex power pumps: City of Forest, Ill., 8x10-inch triplex power pump for water works; Hartford, Wis., 8x8-inch triplex power pump for water works; Craig Oil Co., Toledo, Ohio, 2x6-inch triplex power pump for pumping oil, and two 5x8-inch pumps for water pumping; Massachusetts Mills, in Georgia, 8x10-inch triplex power pump for a water-works plant at Lindale, Ga.; Lunenburg Water Co., Lunenburg, N. S., 8x10-inch triplex power pump to be operated by water-wheel for water-works supply; Media, Pa., two 6x8-inch triplex power pumps to be operated by water wheel for water works supply; Webster & Meathe, Detroit, Mich., 1x4x2½-inch triplex power pump; Hendricks Manufacturing Co., Limited, Carbondale, Pa., 6x8-inch and one 2x6-inch triplex power pump; Plattsburgh Light, Heat & Power Co., Plattsburgh, N. Y., 1x4x2½-inch triplex power pump to be operated by electric motor; Otis Falls Pulp Co., Livermore Falls, Me., 7x8-inch triplex power pump for pumping paper stuff; Prof. L. A. Wait, Ithaca, N. Y., 4x4-inch triplex power pump; W. J. Cooper & Cole Bros., Lincoln, Neb., 6x8-inch triplex power pump; Mineral Farm Consolidated Mining Co., Aspen, Colo., 6x8-inch triplex power pump and five horse-power motor for operating it; Southworth Company, Mittineauque, Mass., 5x8-inch triplex power pump with brass base for pumping paper stuff; Berlin Mills Co., Berlin, N. H., 7x8-inch triplex power pump for pumping paper stuff; Rawitzer & Bros., Stafford Springs, Conn., 7x8-inch triplex power pump; Church & Co., Trenton, Mich., 8x10-inch triplex power pump for pumping hot liquor; Bagnall & Hilles, Yokohama, Japan, 5x8-inch triplex power pump to be driven by electric motor; Jones & Lemson Machine Co., Springfield, Vt., 3x4-inch triplex power pump.

THE inside decoration of houses, office buildings and other structures of the present day has become a work of art. Such essential features as mantels, fireplaces, etc., have been so improved and ornamented that they can be made among the most attractive features of a building. The National Mantel & Tile Co., which has recently opened warehouses in the Manufacturers' Record Building, corner of Lexington and North streets, Baltimore, has recognized this fact, and by its display shows what can be accomplished. It has secured an assortment of the most modern designs of wood and slate mantels, also ornamental wrought-iron work, grates and fireplace turnings, as well as a very large variety of the latest and handsomest patterns in tiling of all kinds, including unglazed, ornamental and marble. It also makes a specialty of interior finish and mantel work in glazed and ornamental terra-cotta. This company is composed largely of directors in the National Building Supply Co., which has a ready attained a reputation which extends throughout the South for the extent of its business and high quality of building material which it furnishes. Mr. John J. Kelly, the president of the National Mantel & Tile Co.; J. C. Doyle, vice president; Mr. Charles S. Houghton, the treasurer, and Mr. H. P. Boyd, the secretary, are all officers of the National Building Supply Co., and their connection with this new enterprise guarantees its success. Mr. S. H. Calkins, a gentleman of ability and experience, will be general manager of the new company, which is not only prepared to furnish all kinds of work such as stated on short notice, but is also in a position to make estimates and to design any kind of mantels or do any kind of tiling or interior work to suit the ideas of architects, contractors or building owners. One of the warehouses is fitted up to represent interiors of houses and offices, and indicates what can be done in the way of combining the ornamental and useful in this character of work.

CONSTRUCTION DEPARTMENT.

THE MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under the head of "Machinery Wanted."

✂ In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ALABAMA.

Birmingham—Rolling Mill.—The Birmingham (Ala.) Rolling Mill Co.'s new 26 inch fire bed mill, with 60-inch rolls and additional light sheet mill, recently noted, will be driven by a 30x60 Corliss engine with a 100,000-pound fly-wheel. Both mills will be completed by October 1.

Cullman—Brick Works.—Mr. Smith is adding pressed-brick machinery to his works.

Huntsville—Machine Shop.—The National Manufacturing Co. will erect a machine shop.

Selma—Clothing Factory.—Application for charter of the Selma Pants and Shirt Factory filed; capital stock \$25,000. The plant will be in operation in sixty days, and will employ thirty-five hands at the start, to be increased to 150. The incorporators are A. G. Parrish, R. H. Agee, J. J. Hooper and others.

ARKANSAS.

Fort Smith—Ice Plant.—D. J. Young has let contract for the erection of an ice plant.

Little Rock—Ice Plant.—W. C. Faucette (care of Chamber of Commerce) proposes building an ice and cold-storage plant.

Little Rock—Starch Factory.—J. H. Craig, of Beatrice, Neb., is making inquiries regarding locating a starch factory.

Pine Bluff—Telephone System.—T. A. Parrish, representing the Harrison International Telephone Co., of Chicago, proposes organizing a \$11,000 stock company.

Van Buren—Electric Plant.—The city council has granted a 15-year franchise to H. J. Isbel, of Parsons, Kans., to establish electric-light and power plant.

FLORIDA.

Gainesville—Leather Works.—The Florida Leather Manufacturing Co. has been incorporated; J. H. Vidal, president; C. T. Smith, secretary, and G. K. Broome, treasurer. The authorized capital stock is \$10,000.

Jacksonville—Lumber.—The Atlantic Lumber Co. has been incorporated with a capital stock of \$250,000.

Jacksonville—Telephone System.—W. N. Shine and A. H. King have received franchise for telephone system.

Jacksonville—Plumbing, etc.—The Standard Supply & Machinery Co., to carry on plumbing, hardware and machinery business, has been incorporated with Morris Sherman, president; John D. Pearsall, vice-president; Thomas E. Owen, secretary and treasurer, and M. K. Mastick. Capital stock is \$25,000.

Lake Butler—Brick Works.—The Lake Butler Brick Co. has been formed, and is building a brick works of 30,000 capacity daily; will work forty men.*

Pensacola—Broom Factory.—Calvin Henry is erecting a broom and brush factory for a New Orleans party.

Punta Gorda—Ice and Electric Plant.—The Punta Gorda Ice & Power Co. has been formed for the purpose of manufacturing ice and electric light and power. Those interested are J. H. Farrington,

William S. Stetson and Lorenzo T. Blackson; capital stock \$10,000.

Tallahassee—Gas Plant.—The Tallahassee Gas Co., D. MacLachlen, superintendent, is extending its mains and has put in new boilers, etc.

Tallahassee—Tobacco Cultivation.—The Leon County Leaf Tobacco Co. has been organized with a capital stock of \$25,000, and will cultivate tobacco.

Tampa—Fertilizer Works.—The Domestic Fertilizer Co. has been incorporated to mine phosphate, manufacture fertilizers, etc. Thomas Palmer is president; Wilbur McCoy, vice-president; John L. Carney, Jr., secretary, and C. R. Redell, general manager; capital stock \$100,000.

GEORGIA.

Athens—Cotton Gin.—It is rumored that a \$250,000 cotton mill will be built at Barnett Shoals, owned by R. L. Bloomfield.

Atlanta—Sewing-machine Works.—The Brosius Motor Sewing Machine Co.'s plant has been sold to Wm. M. Nixon for \$20,000.

Covington—Cotton Mill.—A mill company is being organized.

Douglas—Telephone Line.—E. A. Buck will construct a telephone line.

Douglasville—Knitting Mill.—Jos. S. James is corresponding relative to establishing a knitting mill.

Jackson—Telephone Line.—Stephen B. Kinard will construct a telephone line to McDonough.

Marietta—Paper Mills.—S. A. Anderson, D. N. Anderson, Lewie Sessions and others have incorporated the Marietta Paper Manufacturing Co. with a capital stock of \$150,000.

Monroe—Shoe Factory.—The Monroe Shoe Co. has been organized to start a shoe factory.

Savannah—Naval Stores.—The Kittrell Manufacturing Co. has been incorporated by Messrs. T. C. Kittrell, Meritt W. Dixon and James W. English, Jr., to do a general naval-stores business. The paid-in capital is to be \$10,000, with privilege of increasing to \$500,000.

KENTUCKY.

Franklin—Water Works.—The city has voted \$22,000 to pay for construction of water works. Address the mayor.

Hopkinsville—Water Works.—Samuel R. Bullock, of New York, lately reported as having obtained water franchise, has transferred same to Wilkinson & Smallhouse, of Bowling Green, and they will construct a plant.

Louisville—Wheel Works.—A stock company is being formed to manufacture a wood and metal patent hub and wheel. Frank L. Albert and B. S. Kennett, of New Albany, Ind., are interested.

LOUISIANA.

Monroe—Compress.—The Planters' Compress Co. has been organized by the election of John P. Parker, president; H. Meyer, vice-president, and R. B. Blanks, secretary and treasurer. These officers and A. S. Johnston, A. B. Sibernagel, Jr., constitute the board of directors. The capital stock is \$100,000. The company's press is a new invention.

New Orleans—Bicycle Works.—The Southern Cycle Co., Limited, has been incorporated to build works for manufacturing bicycles, as recently reported. The incorporators are Robert W. Abbott, H. C. Fouston (president), E. M. Graham (treasurer), Chas. E. Fenner and others, and the capital stock is \$50,000.

New Orleans—Printing Works.—The Orleans Printing Co., Limited, has been incorporated to conduct printing works; L. R. Simmons, president; Louis M. White, secretary; capital stock \$2000.

MARYLAND.

Baltimore—Clothing Factory.—The F. William Timpel Co., for the manufacture of clothing, has been incorporated with a capital of \$1500 by William Timpel, James M. Warwick, Roger T. Gill, Robert L. Gill and Adolph J. Dietz.

Baltimore—Electric Plant.—Plans have been completed by Owens & Bieler for a boiler and powerhouse for the Chesapeake Electric & Water Co. The boiler house will be 45x50 feet and the powerhouse 35x50 feet. The buildings will be erected under the supervision of architects, and will cost about \$15,000.

Hagerstown—Coal Mine.—John Stouffer has sunk a coal shaft fifty feet deep, from the bottom of which tunnels have been commenced straight into the mountain.

Salisbury—Shirt Factory.—Lee Powell has made the Board of Trade a proposition for a shirt and cloak factory of twenty-five machines.

MISSISSIPPI.

Canton—Electric-light and Water Works.—Contract for the electric-light plant and water-works

system has been awarded to the Southern Electric Supply Co., of New Orleans.

Ellisville—Telephone System.—P. E. Blumer will establish a telephone system.*

Vicksburg—Electric-light Plant.—The Vicksburg Electric Light Co., which recently signed a five-year contract to light the city, has purchased the necessary machinery and material to completely renew its plant and lines and to largely increase the capacity of its works. The company's building will be doubled in size and remodeled, and a 250 horse-power Corliss engine, perhaps two, put in.

MISSOURI.

Grant City—Water Works.—The city has voted for water works. Address the mayor.

Kansas City—Building.—S. Lathrop, Chas. W. Biler and E. P. Bates have incorporated the Hamilton Building Co. with a capital stock of \$25,000.

Kansas City—Fruit.—W. R., C. B., C. H. and E. Nunnemacher and W. O. Allen have incorporated the Nunnemacher Fruit Co. with a capital stock of \$5000.

Kansas City—Pharmacy.—The Powell-Weed Pharmacy Co., capital \$10,000, has been incorporated by J. C. Wise, L. R. Wise, Guy C. Weed, S. H., L. W. and L. G. Powell.

Kansas City—Shoe Factory.—G. H. Ziegler, of Philadelphia, is trying to organize a shoe-manufacturing company.

Mountain Grove—Printing.—The Glenn Printing Co., capital \$2000, has been incorporated by M. S. Glenn, J. F. Short and John Zachrist.

Parnell City—Cannery.—The Parnell City Canning Co., capital stock \$3000, has been incorporated by T. A. Bradsher, James A. Scott, W. A. Burg and others.

St. Charles—Nursery.—Incorporated: The Mallinckrodt Nursery Co., capital \$5000, by Robert Mallinckrodt, H. J. Osterloh and A. J. Blair.

St. Louis—Hardware.—Rollman-Schuricht Hardware Co., capital stock \$5000, has been incorporated by Carl J. Rollman, Martin G. Schuricht and F. P. Seacher.

St. Louis—Manufacturing.—Incorporated: The Otto A. Brinner Manufacturing Co., capital \$5,000, by Otto A. Brinner, L. A. McGinnis, E. C. Morgan.

St. Louis—Cycle Company.—The Mississippi Valley Cycle Co., capital \$50,000, has been incorporated by Frank J. Kaiser, Mark Leavenworth and John McCargo.

NORTH CAROLINA.

Bessemer City—Cotton Mill.—J. M. Odell, of Concord, will complete and equip the unfinished cotton-mill building at Bessemer City.

Fayetteville—Cotton Mill.—The erection of a cotton mill is proposed to cost \$100,000, and stock for a company is being solicited. W. S. Cook and E. L. Pemberton are interested.

Goldensboro—Cotton Mill.—The Wayne Cotton Mills has been organized with \$60,000 paid-up capital and power to increase this to \$500,000. It buys the old Wayne Cotton Mill, and will put in new spinning machinery and enlarge the mill, as recently stated. Sol Dewey was elected president.

Greensboro—Cotton Mill.—Cesar Cone and E. D. Garsel have purchased a controlling interest in the Crown Mills, and will put the plant in operation; has 6600 spindles.

Greensboro—Lumber Plant.—The Cape Fear Manufacturing Co. has been organized to manufacture building materials; O. R. Cox, president; W. C. Bain, vice-president, and Jno. A. Hodgkin, secretary-treasurer.

Greensboro—Gas Plant.—The Greensboro Gas Co. has put in a 100 horse-power boiler.

New River—Packing-house.—The Carolina Oyster Co. has been organized in Wilmington (address Box 172), and is erecting a packing-house at New River.

Wilmington—Cannery.—H. G. Williamson, of Mt. Olive, will remove his cannery to Wilmington; new building to be built.

Wilmington—Cooperage Plant.—The Carolina Cooperage & Veneer Co. has added \$30,000 to its capital, and has let contract for a new factory to L. H. Vollers. New building is to be 120 feet long, sixty feet wide, two stories high, and the latest improved machinery will be installed.

SOUTH CAROLINA.

Columbia—Mercantile.—The Richland Store Co. has been incorporated by R. S. Desportes and T. K. Legare. The capital stock is to be \$5000.

Darlington—Foundry.—The Darlington Iron Works has been formed by W. J. Early and will erect a foundry, with blast furnace of 2000 pounds capacity.

Union—Cotton Mill.—The Union Cotton Mills' new plant, now building, is nearing completion

Machinery will be ready for operation by June next; equipment, 46,000 spindles and 1200 looms.

Winnsboro—Cotton Mill.—W. R. Doty, A. S. Douglass, T. K. Elliott and others have incorporated the Fairfield Cotton Mills with a capital stock of \$75,000 for the purpose of erecting a mill.

TENNESSEE.

Elizabethton—Cotton Mill.—Clark & Crandall are endeavoring to form the cotton-mill company noted last week.

Knoxville—Boat Company.—The Knoxville, Sevier & Jefferson Counties Boat Co. has been incorporated by S. S. Howell, J. T. Huffaker, Willis Ferguson, William Trotter and D. R. Hicks.

Knoxville—Cotton Mill.—It is reported that a New York company with a capital stock of \$1,000,000 contemplates building a big cotton mill in Knoxville.

Jellico—Coal Mining.—Incorporated: The Jellico B. G. Coal Co., by E. S. Jameson, Henry Win. Dr. L. Badger, E. F. Dezney and W. W. Bayard.

Morristown—Electric-light Company.—Incorporated: The Morristown Electric Light Co., by John K. Shields, R. E. L. Mountcastle, George A. Crouch and W. H. Faine, Jr.

Persia—Creamery.—Incorporated: The Persia Creamery Co., by Wm. M. Averitt, John R. Saunders, F. M. Reynolds, Wm. Grigsby and J. J. Charles.

Somerville—Cotton Compress.—Jerome Hill, of St. Louis, president of the Cotton Ginners' Compress Co., has purchased the Somerville Mill & Gin Co.'s \$6000 ginny plant at Somerville, and will add to same a plant for compressing cotton into cylindrical bales.

TEXAS.

Alice—Telephone System.—The Alice, Wade City & Corpus Christi Telephone Co. has filed its charter; purpose, the construction and maintenance of a telephone line in and through a number of counties; capital stock \$3000; incorporators, George Hobbs, Thos. C. Wright and John Wade.

Austin—Cotton Mill.—Walter Tips is collecting subscriptions for the proposed cotton mill. An investment of \$150,000 is contemplated in a 5000-spindle and 260-loom plant.

Dallas—Coal Mines, etc.—Chartered: The Cavalon Coal, Coke & Railway Co.; principal office Dallas; capital stock \$500,000; incorporators, J. T. Mayfield, E. H. Alexander and J. T. Elliott.

Gainesville—Increase Capital.—The Gainesville Cottonseed Oil Mill & Gin Co. has increased its capital stock to \$100,000.

Galveston—Asphalt Refinery.—There is a possibility of the Trinidad Asphalt Co. establishing a refinery in Galveston. Address Frank D. Mulen, superintendent, New Orleans, La.

Laredo—Coal.—Chartered: The Laredo Coal Co., by A. L. McLane, E. A. Atlee, W. L. Giddens, Charles Lang, of Laredo, and C. B. Wright, of Philadelphia, with a capital stock of \$600,000.

Livingston—Cannery.—A cannery will be established.

Venus—Compress, etc.—Chartered: The Venus Gin & Compress Co., with a capital stock of \$10,000, by C. M. Key, J. C. Smith and S. M. Bell.

Luling—Oil Company.—Chartered: The Luling Oil Mill Co., capital stock \$10,000, by Charles Baumgarten, A. J. Conley and C. W. Conley.

Mexia—Mercantile.—Incorporated: The H. M. Mungen, Jr., Co., capital stock \$25,000, by S. T. Mungen, H. M. Mungen, Jr., and R. P. Mungen.

New Birmingham—Iron Furnaces.—Jno. B. Reagan, of Rusk, has been appointed receiver of the New Birmingham Iron & Land Co., and the furnace will be put in blast as soon as necessary repairs can be made. About 500 men will be employed.

Smithville—Electric-light and Water Works.—A company is being organized to build electric-light plant and construct water works.

Texas City—Compress.—Work has been commenced on the cotton compress for Thos. Cullyford, of Duluth, Minn. The press is to be a 95-inch one of Morse pattern, with 10-hour capacity of 10,000 to 12,000 b. les.

Waco—Dam.—Sam Sanger, J. S. McLendon and W. W. Seley have been appointed a committee to further the Brazos river dam project.

West—Compress.—The West Gin & Compress Co. will build a compress of sixty bales daily capacity.

VIRGINIA.

Big Stone Gap—Coke Ovens.—The Big Stone Gap Colliery Co. has put its fifty coke ovens in blast, producing seventy-five tons daily.

Buena Vista—Electric Plant.—The Buena Electric Light & Power Co. has contracted for the remodeling of its plant from steam to water-power.

East Radford—Corn and Feed Mill.—The Crystal

Springs Ice Co. will erect a corn and feed mill of 100 bushels daily capacity.*

Lynchburg—Cotton Mill.—The Lynchburg Cotton Mill Co. will put in 1536 new spindles, making 21,536 in all.

Petersburg—Drugs.—Incorporated: The Gatling Pharmacist Co. to buy and sell drugs. The capital stock shall not be more than \$40,000; president, Geo. P. Gatling; secretary and treasurer, Wm. F. Spotswood, who, with Mary W. Gatling, John Holbrook and Lilburn W. Spooner, are directors.

Portsmouth—Dry-kilns.—The Portsmouth Lumber Manufacturing Co. has purchased machinery and will rebuild its dry-kilns.

Richmond—Ice Rink.—Geo. R. Jarman, late of Durham, N. C., is arranging to construct an ice skating rink.

Richmond—Dry-kiln.—The Moore Lime Co. will erect kiln for drying green staves.*

Roanoke—Furnace.—Peury Bros. & Cooper, who recently leased the Roanoke Iron Co.'s blast furnace, have incorporated the West Roanoke Iron Co. with William Beury, president; John Cooper, vice president; William Beury, treasurer, and J. L. Beury, secretary.

Roanoke.—The Roanoke Coal & Fertilizer Co. has increased its capital stock from \$5000 to \$10,000.

Roanoke—Land Improvement, Water, Electric Lights, etc.—The Ironton Company and the Riverside Company have each been incorporated, their purposes being the improvement of lands, furnishing of light, water, etc. The capital stock of each is \$10,000, with power to increase to \$300,000. The officers are: President, John H. Dingee; secretary, John M. Wirgman; treasurer, William H. Triol; directors, John H. Dingee, John M. Wirgman, Wm. H. Triol, J. Walter White and Robert J. Ringwalt, all of Philadelphia, Pa.

WEST VIRGINIA.

Berkeley Springs—Sand Mine.—The Berkeley Springs Sand Co. is developing a vein of white sand forty-five feet wide, from sixty to 150 feet high.

Sistersville—Oil Well.—The Oxford Oil Co.'s No. 1 well has commenced to flow 720 barrels daily.

Sistersville—Oil Wells.—Jas. M. Hensley, of Hartford City, and H. E. Spilman, of Point Pleasant, will drill oil wells in the Sistersville field.

Sistersville—Oil Well.—The Paova Oil Co.'s new well has commenced; reports say 200 barrels daily.

BURNED.

Louisville, Ky.—Charles Schweinfurth's bakery; loss \$4500.

Madison, N. C.—Kallam & Simpson's flour and lumber mills; loss \$8000.

Quantico, Md.—T. R. Jones & Bro.'s cannery.

Union City, Tenn.—Lemones & Son's spoke mill; loss \$7000.

BUILDING NOTES.

Augusta, Ga.—School.—The board of education will erect a school building.

Austin, Texas—College.—N. J. Clayton & Co., of Galveston, have prepared plans for a college building for the St. Edward's College, Austin, to be 126x81 feet, four stories, have galvanized iron-work, iron beams, scenery for theatre, school seats, ventilators, bathroom outfit, etc.; cost \$30,000.

Clarksburg, W. Va.—Church.—Contract for church building let to Silas Dawson at \$10,000.

Columbus, Ga.—Courthouse.—Sealed proposals are invited for building a courthouse. Plans and specifications may be seen at the office of the ordinary of Muscogee county, in Columbus, or at the office of the architects, A. J. Bryan & Co., Atlanta, Ga. Bids will be opened on the second day of October, 1895. For further information address the architects, or Geo. O. Berry, secretary, Columbus, Ga.

Davisboro, Ga.—Bank Building.—The Bank of Davisboro, W. S. Witham, president, will erect a building.

Jacksonville, Fla.—Armory.—The county commissioners will arrange for building a \$25,000 armory.

Louisville, Ky.—Dwelling.—Clark & Loomis have prepared plans for a residence for C. H. Shield, to have electric bells and lighting, etc.; cost \$8000; contracts let.

Mineral Wells, Texas—School.—Sanguinet & Messer, of Fort Worth, have prepared plans for \$10,000 schoolhouse.

Morganton, Ga.—Courthouse.—Plans by Andrew J. Bryan & Co., of Atlanta, have been accepted for courthouse. Bids will probably be opened within sixty days.

New Orleans, La.—Dwellings.—Building permits issued to Mrs. A. E. Moore for a two-story dwelling to cost \$3000; to A. B. Wheeler, two-story brick residence, \$15,000; to Father Fallon for a brick addition to rectory on Camp street, \$3000, and to P. Reis for a double cottage, \$2500.

Norfolk, Va.—School.—Contract for building school let to Hamberry & Coops for \$11,997.

Paris, Texas—Courthouse.—Contract for the new courthouse awarded to Martin, Byrne & Johnston, of Colorado City, at \$88,190.

Shiner, Texas—Dwelling.—Mauer & Wesling, of La Grange, have taken contracts for a two-story brick building to cost \$7000 for W. Wendland & Co.

Smithville, Texas—City Hall.—The city council has authorized issuance of \$6500 in bonds for building a city hall.

St. Louis, Mo.—Dwelling.—Will Levy, Oriel Building, has prepared plans for a residence for Walker Buckner, to have electric bells and lighting, steam heating, etc.; cost \$20,000.

St. Louis, Mo.—Office Building.—C. K. Ramsey has prepared plans for store and office building for Ellis Wainwright, to be fire-proof, have architectural iron and marble work, iron beams, electric lighting, steam heating, plumbing, etc.; cost \$25,000.

St. Louis, Mo.—Storage-house.—Wagner & Jenisch, 606 Commercial Building, have prepared plans for a storage-house for Tamm Bros., to be three stories, of brick, have electric lighting, gas fixtures, two hydraulic freight elevators, asbestos, furnace, plumbing; cost \$10,000.

Victoria, Texas—Dwelling.—J. J. Welder is preparing to build a \$25,000 residence. McAdoo & Woolley, of San Antonio, prepared the plans, and bids are wanted for building.

Washington, D. C.—Dwellings.—Building permits issued: D. B. Gotwals and R. D. Midough, three two-story brick dwellings to cost \$6900; J. J. Minohan, two-story brick store, \$4500.

Waxahachie, Texas—Dwelling.—M. B. Templeton has contracted for an \$8000 residence.

West Palm Beach, Fla.—Residence.—Charles Clarke, of Pittsburg, will build a residence.

Wheeling, W. Va.—Business Building.—The News Publishing Co. will erect a three-story building.

Wheeling, W. Va.—Office Building.—Franzheim, Geasey & Faris have prepared plans for a five-story 35x40 foot office building for A. M. Jarrett. Bids are wanted.

Yoakum, Texas—Dwelling.—Mauer & Wesling, of La Grange, have taken contracts for a one-story brick building 52x80 feet to cost \$4500 for Joe Neuman.

RAILROAD CONSTRUCTION.

Steam Railways.

Atlanta, Texas.—It is reported that business men will organize a company to build a line from Atlanta to Collins Bluff, on Red river, twenty six miles.

Beaumont, Texas.—About ten miles of the Gulf & Interstate on the section between Beaumont and Galveston have been completed.

Birmingham, Ala.—Mr. J. M. Maris, general manager of the United States Car Co., denies the report that his company intends completing or extending the Macon & Birmingham line.

Bristol, Tenn.—It is reported that the Willey Boom & Lumber Co. is preparing to complete the Holston Valley road.

Brooksville, Ky.—E. S. Whitney, of Allentown, Pa., has secured the contract for building the road between Wellsburg and Brooksville, ten miles.

Carthage, Mo.—A. W. Nesbitt, of Forrest Home, Lawrence county, is promoting the 50-mile railway between Carthage and Aurora, and is being assisted by Mr. Harrington, a capitalist, of Carthage.

Conroe, Texas.—It is stated that the syndicate which recently purchased the Texas, Louisiana & Eastern will extend it from its present terminus near the Trinity river to Beaumont. The line is completed for thirty miles between Conroe and the river. Marx & Blum, of Galveston, are in the syndicate.

Dothan, Ala.—Engineers are surveying a route for the proposed line to connect Greenville with Dothan or some other station on the Alabama Midland. J. R. Crawford is one of the promoters. The road is termed the South Alabama & Gulf.

Elkins, W. Va.—Resident Davis, of the West Virginia Central & Pittsburg, is considering an extension of the line to some point on tidewater from Davis, W. Va.

Hinton, Va.—Representatives of the Chesapeake & Western have made preliminary surveys for an extension into Hardy county, W. Va., by way of Hinton and through Rockingham county. E. C. Machen is in charge of the matter.

Kingwood, W. Va.—It is expected to complete the work of changing the Tunnelton, Kingwood & Fairchance road to standard gage by October 1. The present road is ten miles long. J. A. Martin is superintendent.

Knoxville, Tenn.—It is reported that work is about to be resumed on the Tennessee Central, of which Hon. Jere Baxter, of Nashville, is president. The Tennessee Coal Iron & Railroad Co. and Nottingham Bros., of St. Louis, are stated to

be interested in the company. This road is to be about sixty miles long, and begins at a small town known as Monterey, the present terminus of the Crawford system of railroads which runs from Lebanon to Monterey, a distance of about eighty-five miles. The Baxter road from Monterey to Crossville has been graded and the ties supplied, also the section from Emory Gap to Kingston.

Little Rock, Ark.—It is now reported that J. V. Clarke, of New York, has succeeded in inducing Northern parties to furnish the necessary financial assistance to complete the Little Rock, Hot Springs & Texas 150 miles, which Uriah Lott is promoting.

Marshall, Texas.—L. W. Lloyd, of Pittsburg, Pa.; R. C. Strother and others are interesting Marshall parties in a proposed railroad from Paris through Marshall to Sabine Pass.

Meridian, Miss.—Mrs. Simmons, of Jackson, Tenn., has purchased the Poplar Springs dummy line extending from Meridian into the suburbs, and, it is stated, will rebuild a portion of it and secure additional rolling stock. The road is standard gage and two miles long. N. M. Brandon is engineer.

Nevada, Mo.—H. M. McPherson, of Boonville, projector of the El Dorado Springs road, is negotiating with business men to extend it to Nevada from El Dorado.

Opelika, Ala.—O. A. Harwell has begun the work of grading five miles of the steam dummy line to be built between Opelika and La Fayette.

Spartanburg, S. C.—It is reported that the Carolina Central division of the Seaboard Air Line is to be extended from Henrietta to Spartanburg, thirty five miles. E. St. John, at Portsmouth, Va., is vice-president.

Waco, Texas.—Wilber F. Boyle, of St. Louis, supposed to represent the Missouri, Kansas & Texas, has purchased the Waco & Northwestern, extending fifty four miles from Ross to Bremond. It is reported that it will be extended sixty seven miles to connect with the Trinity branch of the Missouri, Kansas & Texas. Thos. C. Purdy, at St. Louis, may be addressed.

Warren, Texas.—It is reported that a surveying party is laying out a connection between the Houston, East & West Texas and the Shreveport & East Texas. C. A. Epping is reported to have the contract for building ten miles of the road.

Waycross, Ga.—It is stated that President B. A. Denmark, of the Merchants' National Bank of Savannah, Ga.; C. L. Julien, of Boston, and others have taken up the question of extending the Waycross Air Line to Fort Valley.

Waycross, Ga.—Engineers have surveyed a road from Nichols Station, on the Waycross Air Line to Hazlehurst, Ga., on the Southern system. The Southern Pine Co. is interested in it.

Waycross, Ga.—It is reported that the Plant system will have an extension of its own to Atlanta from Waycross. The distance is about 200 miles. H. B. Plant, 12 West 23d street, New York, is president.

West Point, Ga.—It is stated that the Chattoahoochee Valley Railway Co. is considering an extension of its line now under construction to Fredonia or Anniston, Ala. President W. T. Lanier may be addressed.

Electric Railways.

Atlanta, Ga.—A. Mr. Baer, of Cincinnati, is considering the construction of an electric line about twenty miles long from Atlanta to Douglasville.

Bedford City, Va.—C. A. Ruffin, of Charlottesville, Va., has made a proposition to build a street railroad in Bedford City to be operated by horse-power and eventually by electric-power.

Fairfield, Ky.—The promoters of the electric line between Louisville and Fairfield have elected the following directors: J. M. Wigginton, J. N. Lilly, F. O. Carruthers, W. H. Ellaby, Laf DeWitt, John McKenna, J. F. Allen, J. Lloyd, J. C. Wright and Matthew O'Doherty. It was decided to file articles of incorporation immediately for the company.

Manchester, Va.—John C. Robertson, of Manchester, who is promoting the electric road from Manchester to Petersburg, it is stated, has laid out a route by the way of Huguenot Springs over the Midlothian and Buckingham turnpikes.

Mobile, Ala.—The Mobile Railroad Co. has decided to make an extension of its electric line into the western suburbs. J. C. Morris is president.

Richmond, Va.—James H. Barton and others have begun the construction of a trolley line in the suburbs, beginning at Barton Heights.

Savannah, Ga.—The Suburban & West End Railway Co. has decided, it is reported, to build an extension one mile long to its trolley lines. James H. Johnston is president.

St. Louis, Mo.—Surveys are being made for an electric line from a portion of the suburbs to Ferguson, Mo., ten miles distant.

Washington, D. C.—The company interested in the proposed line between Washington and Forest Glen, it is stated, is now securing right of way. Benjamin F. Leighton is among those interested.

Machinery, Proposals and Supplies Wanted.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.

Bridges.—Bids will be received October 7 by the commissioners of Craven county for wooden bridges with iron draws in accordance with plans and specifications. Address Jas. W. Biddle, register, New Bern, N. C.

Broom Factory.—P. G. Bowman, Clarksville, Ga., wants estimates on broom factory.

Cannery.—P. G. Bowman, Clarksville, Ga., wants estimates on cannery.

Cars.—The Lake Butler Brick Co., Lake Butler, Fla., will buy dump and track cars.

Corn and Feed Mill.—The Crystal Spring Ice Co., East Radford, Va., wants to buy a corn and feed grinding buhr mill of seventy-five to 100 bushels capacity per twelve hours.

Dry-kiln.—The Ohio Valley Pulley Works, Maysville, Ky., wants dry-kiln to dry 3000 to 5000 feet of lumber per day.

Dry-kiln.—The Moore Lime Co., Richmond, Va., wants dry-kiln for green staves.

Dry-kilns, Saw Mill, Woodworking Machinery, Boiler, Engine, etc.—The Hudson Machine & Construction Co., Hudson, N. H., wants the following second-hand machinery: Seventy to eighty horse-power tubular or pill-box boiler, with stack; fifty or sixty horse-power centre-crank engine; endless double bed surfacers or two single surfacers; 10-foot saw mill, with Lane or similar set works; slab resaw, planer and matcher, light gang-edger, knife grinder; one fan dry-kiln outfit with 500 feet of pipe one with 2000 feet of pipe, 40 or 50 inch shaving fan, two or three inch shafting and hangers.

Electric-reduction Aluminum Plant.—S. F. Chapman, Asheville, N. C., wants to correspond with makers of machinery for the reduction by electricity of bauxite to aluminum.

Elevator.—Sealed proposals will be received until September 20 for furnishing and erecting complete either a steam or electric passenger elevator for United States courthouse at Paris, Texas. Address H. R. P. Hamilton, acting supervising architect, Washington, D. C.

Engine.—The Crystal Springs Ice Co., East Radford, Va., wants a ten to twenty horse-power engine.

Fertilizer Machinery.—A. J. Strickland, Valdosta, Ga., wants machinery for mixing dry fertilizers.

Gas Engines.—Wanted, three five horse power gas engines. Address Baumgarten & Co., 213 East Fayette street, Baltimore, Md.

Photo-engraving Outfit.—Gilliam & River, Reidsville, N. C., wants to buy outfit for photo engraving.

Piping.—The Greensboro Gas Co., Greensboro, N. C., is in the market for 4300 feet four-inch cast gas main, immediate delivery, f. o. b. Greensboro, N. C. Address R. J. Marks, manager.

Printing works Equipment.—A. Springer & Son, St. Augustine, Fla., want to buy a job printing press for hand and power, binding machines, paper cutters, cabinets and type trays, fifteen to twenty fonts type, etc.

Pulleys.—The Lake Butler Brick Co., Lake Butler, Fla., will buy a friction pulley.

Rails.—In the market for eight or ten miles of new or second-hand steel rails, 35 or 40 pound, for tramway. Address C. A. Epping, Warren, Texas.

Railway Equipment.—The Wray Mining Co., Cedartown, Ga., wants a 12 to 15-ton Porter or Baldwin locomotive; 42-inch gage preferred.

Sausage Machinery.—J. C. Pitman, Raleigh, N. C., wants machinery for manufacturing and mixing sausage.

Scales.—Green & Yarbrough, Louisville, N. C., want scales for tobacco or zebuise.

Seagrass.—J. W. Thompson & Co., Bay City, Mich., are in the market for fifty carloads of seagrass.

Telephones.—P. E. Blumer, Ellsville, Miss., wants prices on telephones, wire, etc.

Trunk Factory.—P. G. Bowman, Clarksville, Ga., wants estimates on trunk factory.

Woven-wire Machinery.—T. R. Williams, Arvonia, Va., wants to buy a hand-power machine for weaving wire fence to post set in the ground; also wants wire sufficient for a mile fence.

TRADE LITERATURE.

SOME rich new designs in white enameled baths are being brought out by the Ahrens & Ott Manufacturing Co., Louisville, Ky. The luxury and comfort of these baths, with their improved fixtures, as well as the well-known durability of this concern's product, should make them a popular article with the plumbing trade. Advance pages illustrating and describing these baths are sent out by the company.

MILLING cutters for various uses are shown in a catalogue issued by the L. S. Starrett Co., Athol, Mass. The cutter department of this company is under the management of Mr. F. J. Gay, an expert in this branch and is equipped with standard and special tools adapted to the different operations in the production of first-class cutters. Among the list made are cutters for gear wheels, twist drills, taps, reamers, irregular formed cutters which can be sharpened by grinding without changing the form, side milling cutters, metal slitting saws, angular cutters, end mills, screw slotting cutters, etc.

THE Ransome system of monolithic subways is described in a pamphlet which will interest all live municipal officials. It is issued by the Ransome Subway Co., Monadnock Block, Chicago, Ill. Under this system of construction the cement pipe or ditch is formed directly in the ground wherever needed without breaks or joints in a cheap and rapid serviceable manner. The construction of subways are necessities of city life, and well informed city officials recognize the advantages to be gained by a more permanent system than followed in old methods. Concrete is now widely endorsed for this work, and the method of construction employed in the Ransome system gives assurance of satisfactory results.

FRENCH butt mills of the heavy, strong and durable type built by Spiout, Waldron & Co., Muncy, Pa., are described and illustrated in a catalogue sent out by that concern. The publication offers those contemplating the use of flour-mill machinery an acquaintance with improved method of handling grain by the roller-process system. A very clear explanation of the construction and form of operation is given, and the features brought out are interesting and suggestive. For the grinding of oilcake, cottonseed, paint, phosphate and cement rock, roots and herbs and all hard substances, this firm produces machinery whose utility and economy of operation will appeal to the practical and well informed mechanic. A number of machines recently introduced are shown by the catalogue.

CORRECT mechanical principles are displayed advantage in the new catalogue issued by the Pen Argyl Iron Works, Pen Argyl, Pa. High-grade hoisting machinery is the specialty of this establishment. The catalogue describes and illustrates the steam boilers, hoisting, haulage and pile-driving engines, derricks, mining and quarrying machinery built by this concern. A large stock of this machinery in such a stage of completion as will permit reasonably prompt shipments is constantly kept on hand. All machinery is practically and thoroughly tested before leaving the works. The superior quality of workmanship and material employed adds to the assurance of satisfactory operation which its patrons thus receive. A number of advantageous improvements in this class of machinery is shown by the catalogue, which will prove handy for reference and suggestion to the progressive contractor.

ACCURACY, elegance, speed, and even the success of the draughting done by the professional man is in a measure dependent upon the qualities of the instruments which he uses. The nearer they are in perfection in every minute detail as to form, proportion, material, construction and finish the nearer he can approach to perfection in his work. With perfect tools there is nothing to prevent his acquiring the manual dexterity necessary to produce the best work in the least time. As these tools are constantly used by him during the active period of his career, their first cost is of small importance in comparison with their qualities. One may use an instrument throughout a period of thirty years or more and so familiarly become the weight, feel and location of the parts that the operations are performed instinctively, the mind being left free for its legitimate work, and is not hampered by any demands upon it in connection with the merely mechanical part of draughting. Such instruments must be perfect originally and so well constructed with all parts so well fitted as to retain their qualities. The professional draughtsman knows the advantage and importance of high grade tools. It is the student, the apprentice and the young engineer just starting out who need advice against buying cheap instruments. The unquestionable standing of the Altmeyer instruments offers a safe guidance in this direction. In the production of these instruments it has been the faithful and persistent endeavor of the manufacturer to attain perfection in design, material, workmanship, temper and finish, and every detail, no matter how small, has been considered from the stand-

point of the draughtsman as well as that of the mechanic. Theodore Altmeyer & Sons, 939 Ridge avenue, Philadelphia, Pa., the makers, have issued a very complete catalogue of such instruments.

THE bigness of machine tools of a modern type is brought out in attractive style in a pamphlet issued by the Hilles & Jones Co., Wilmington, Del. Machines of gigantic capacity, ponderous in appearance, but as precise as the works of a fine watch in operation, are illustrated by faithfully executed engravings. Full-page illustrations show: A patented beam coping machine of new design with capacity for coping all sections of beams of all sizes up to twenty-four inches inclusive; No. 6 single punch or shear of fifty-four inches depth of throat; a special construction of the same machine; No. 4 single punch or shear with an arrangement of gearing applicable to all sizes of single punches or shears; No. 4 special punch for notching fish plates, etc.; special No. 3 single punch and shear for street rail work; No. 3 double punch, with sliding heads worked by gag arrangement in place of clutches, for bridge and structural work generally; No. 4 combined punch and shears, with punch end of machine arranged for structural and flange work; gate shears; multiple punches; plate planing machine with wrought iron beam and clamping jacks, designed for planing plates of any length up to thirty-two feet at one setting; plate-bending rolls with duplex friction clutch pulleys; patented double angle shear on turntable, electrically driven; horizontal shear and straightener; horizontal punch with steel die stake and automatic stop. A number of other interesting machines are also illustrated.

THE handling of coal and ashes in power stations is, in many cases, not a simple engineering problem, but is so affected by the environment as to make it one difficult of solution and requiring complex and expensive machinery to obtain the greatest economy in the daily operation of the plant. This expense of handling materials has in the past been considered a minor one, but through the more exact knowledge of thermodynamics and the perfection of modern machinery the saving in expense that it is possible to make has, it is believed, nearly reached its limit. As a result the saving which is possible in the handling of coal and ashes, hitherto neglected, has become relatively more prominent. Some of the modern steam generating plants have the buildings, the boilers and the coal storage especially arranged by the architect to decrease the daily operating expenses to the smallest possible amount, and incidentally to reduce the first cost of the coal handling machinery. The arrangements that have been adopted at several important stations of this character make interesting reading. In a pamphlet issued by the C. W. Hunt Co., 45 Broadway, New York, some valuable information is given along this line. An example is cited of the saving possible with the proper equipment. This was in supplying a plant to take coal from the hold of a vessel which comes at irregular times, storing in a 6000 ton pocket 800 feet distant, taking it from the pocket and delivering it continuously, day and night, to the front of the boilers for a total cost, including the interest on the investment, of less than three and one-half cents per ton from the hold of the vessel to the boiler furnaces. This manifestly required a large expenditure for machinery. But the reduction of the cost of handling 25,000 tons of coal per annum from twenty-seven and one-half cents to three and one-half cents per ton pays a net profit above interest and all expenses, and available for dividends, of \$6000 per annum.

THE multiplicity of duties to which compressed air is applied and the variety of work in the successful performance of which it is an important factor lends great value to trustworthy information, methods and machinery for its development and control. A feature of a new catalogue issued by the Clayton Air Compressor Works, 26 Cortlandt street, New York city, is an illustrated article upon the widening uses of compressed air. This addition to the usual make-up of a machinery catalogue makes the publication of permanent value to every user of compressed air. The article originally appeared in the Engineering Magazine, and is revised and extended by the author. The mysterious contemporary of compressed air, electricity, with its unknown possibilities, has been the favorite study of those interested in the subject of power transmission, and compressed air, with no such avenues of research and experiment to offer, has suffered therefrom. Electricity has now grown out of its infancy and its possibilities are more clearly defined and understood; hence compressed air is deservedly receiving more widespread attention. Not many years ago a compressed air installation under ordinary conditions which did not show a loss of 50 per cent. in converting steam into air power was a rarity. This was a condition plainly chargeable to the builders of air compressing machinery, and which it became their duty to overcome. The modern air compressor, with its various devices for avoiding clearance spaces, its improved cooling appliances, its methods of reheating the air and its other numerous improvements, entirely changes the situation, and compressed air, with natural advantages which

have in many instances rendered it indispensable, comes forward with claims for consideration as a means of power transmission on the basis of economy, which it formerly did not possess. In this age of the survival of the fittest we no longer find makers heralding a loss of 25 per cent. in compressing air to eighty pounds pressure as "absolutely unavoidable." As specialists in the construction of air compressing machinery, with an experience covering twenty-five years, the Clayton Company is building air compressing machinery which is the result of the ripe judgment acquired in that long period.

COMPARISONS are always interesting if material things are compared. Sometimes they are astounding. Often they are surprising. To the average American of thirty-five years ago the idea that the United States could produce steel rails was almost beyond his conception, while the thought that the manufacture of silk in this country could acquire a growth almost equal to that of France was one that the American of twenty years ago could hardly grasp. Even in more recent periods it has been a difficult thing for many of us to imagine the growth of industries in this country that have seemed to exclusively belong to Europe. Not only was this so of the industries mentioned, but it applied as well to the manufacture of aniline dyes, soda ash, and, latterly, to the production of Portland cement. This latter industry has by historical precedent almost seemed to be essentially a European one. Whenever cement is spoken of the mind at once reverts to Roman cement. All the large works of the Romans were constructed with a mixture of lime and puzzolana, which gave them their lasting character, and gave the cement of which they were composed its well-known reputation. Naturally, therefore, in later years, when the Roman cement, which was first imitated in England by a natural product made by grinding the nodules of the septaria, began to give place to the artificially-produced Portland cement, after this latter's invention in England in 1824, this country looked to Europe for its supply of its newly-manufactured article of commerce. Today there stands \$200,000,000 worth of buildings, bridges, subways, etc., constructed with "Giant" Portland cement, the product of the American Cement Co., of Philadelphia, Pa., and American determination, enterprise and skill has shown to the world that Portland cement of a character equal to any imported can be made in this country out of natural rocks containing all ingredients of a Portland cement, and as well out of marls and clays which are the chemical equivalent of the chalk and clay of the English and the marls and clays of the German and Belgian works. What is possible with this American product is demonstrated in a highly interesting publication issued by this company, and entitled the "Portland Cement Industry in the United States," a copy of which can be secured on application by parties interested. An index is furnished covering a list of interesting topics on cement in the nature of cohesive and adhesive tests, compression tests, freezing tests, together with many other subjects of practical value to engineers and architects. Among the notable works on which this company's cement was used is the celebrated Johnstown bridge of the Pennsylvania Railroad Co., which stood the floods of 1886 and 1891; the new East river bridge, Blackwell's Island, New York; the terminal stations of the Pennsylvania Railroad and the Philadelphia & Reading Railroad in Philadelphia; the Jersey City terminal of the Pennsylvania Railroad, and nearly all the large dams of the new Croton aqueduct system of New York.

Doesn't Stop for Fogs.

Of course everybody concedes that the pleasantest way to take a trip from New York to Boston is to go by one of the Sound boats. Business men, however, sometimes hesitate a little about going this way for fear of being delayed by fog. All such people who want to get into Boston early in the morning without fail should try to get the "City of Lowell," one of the Norwich Line boats. That is a propeller with double screws, and it is handled so easily that it can go with perfect safety in a fog where the larger and more unwieldy steamers find it hazardous. There are very few fogs on the Sound that can delay the "City of Lowell."

FOR SALE CHEAP.

One Worthington Compound Duplex Condensing Pumping Engine: capacity 1,500,000 gallons.

About one mile and a-half of 20-inch Steel Pipe, expansion joints, etc.

About two and a-half miles of 12-inch wrought iron Flanged Pipe, with expansion joints, etc.

One 100 horse-power Steel Boiler.

H. A. JUDD,
NEW LONDON, N. C.

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\$1.25 Washington and Back via Pennsylvania Railroad.

Saturday and Sunday, September 14 and 15, excursion tickets will be sold at all Baltimore offices at \$1.25 for the round trip, good on all regular trains in each direction, and valid for return passage until Monday, September 16, inclusive. †

VALUABLE

Virginia
Iron and
Manganese

PROPERTY
FOR SALE.

The undersigned, as trustee, offers for sale on the most reasonable terms, about 25,000 acres of iron ore, manganese and timber lands on the line of the Shenandoah Valley branch of the Norfolk & Western Railroad in Rockingham County, Va. These lands are in the famous iron ore belt at the Western base of the Blue Ridge, and its ore beds have been opened and are in good shape for inspection. The same is true of its manganese and manganiferous ores. For further particulars and for price address

JED. HOTCHKISS,
STAUNTON, VA.

CHESAPEAKE & OHIO RAILWAY.

ANNUAL REPORT FOR THE YEAR ENDING JUNE 30, 1895.

To the Stockholders:

Pursuant to by-laws, the annual report is submitted as follows:

EARNINGS AND EXPENSES.

The gross earnings and expenses of the Company, and the mileage operated during the year ending June 30th, 1895, compare with the four previous years as follows:

Year ending June 30.	1891.	1892.	1893.	1894.	1895.
Miles Operated.....	*934	*993	*1193.5	*1278.1	*1275.9
Gross Earnings.....	\$8,127,111	\$9,004,599	\$10,336,810	\$9,044,108	\$9,596,030
Oper. Expenses, Maint. and Taxes.....	6,083,518 (75%)	6,731,731 (75%)	7,132,760 (69%)	6,047,127 (67%)	6,404,527 (67%)
Net	\$2,043,598	\$2,272,867	\$3,204,049	\$3,016,980	\$3,131,502
Interest on Funded Debt, Loss on Grain Elevator, &c.....	\$1,823,781	\$1,881,548	\$2,780,289	\$3,002,920	\$3,112,796
Surplus over all Charges.....	\$219,810	\$391,319	\$423,760	\$14,060	\$18,706

*Also 84.5 miles between Orange and Washington, operated under trackage agreement during a part of 1891, and during 1892, 1893, 1894 and 1895.

The depression in business noted in the report for the year ending June 30, 1894, has continued during the present year. There has not been, however, any coal strike to contend with, as in the previous year, but the rate of freight upon that commodity has been constantly declining, owing to competition and to the fact that as the company enlarged its coal market the business had to be done at low rates.

It will be seen, from the statements annexed, that passenger earnings show a large decrease, which is due to the depressed condition of industries along the line throughout most of the year. Freight earnings show an increase, also miscellaneous earnings, and express earnings a fairly good increase. The total increase of earnings is \$551,922.20.

The decrease in the number of passengers was more than the decrease in passenger-train mileage, and consequently earnings per passenger-train mile have declined from 95 to 88 cents. The rate per passenger mile, however, has increased from 1.90 cents to 1.98 cents. The average haul of freight has increased from 289 miles to 303, which arises from the fact that the increase in tonnage has been from through business. The average number of tons of freight hauled per train mile has increased from 301 to 315 tons; the earnings per mile run by freight trains have, however, decreased from \$1.43 7-10 to \$1.33 6-10, due to the shrinkage in rate. The average amount received for coal to the seaboard decreased from 3.20 to 3.93 mills; coal elsewhere than to the seaboard, from 4.43 to 3.86 mills; freight other than coal, from 5.66 to 5.26 mills, and the total amount received per mile from each ton of freight, including coal, decreased from 4.78 to 4.25 mills. It may be remarked here that if the Company had obtained the same rate per ton per mile on freight as it obtained in the previous year, the earnings would have given over one per cent. dividend upon the capital stock, notwithstanding the fact that the rate of compensation received in the previous year was very low. Nothing but the extraordinary cheapness with which your railway can handle freight has enabled it to carry this immense tonnage with profit at this low price. The economy with which the road has been operated is also due to its high physical condition and to efficiency in its train service. During the year there has been no serious accident either to persons or property.

Attention is called to the detailed statements of the Auditor and the General Manager, which show how successful the Company has been in handling this large increase of business with a relatively small increase in transportation expenses, viz., \$208,000.

There is an increase of over \$66,000 in the maintenance of way; over \$145,000 in the maintenance of equipment; taxes decreased slightly; traffic expenses show a small increase; the Newport News Terminal a slight increase, and the Cincinnati Bridge an increase of a little over \$14,000.

The result of the year's business is an increase of \$114,522.30 in net earnings over those of the previous year. The policy of thoroughly maintaining and improving the property has been followed during the past year, as heretofore; and in a few distinct items alone \$304,000 could have been saved or postponed if necessary; but, as the Company was earning its fixed charges, there seemed to be no necessity for economizing to the detriment of the property. This \$304,000 of expenses was composed of the following items: 180 new freight cars (to replace old cars destroyed or dismantled), costing \$80,570.97; two new ferry boats, costing \$8,705.69; filling trestles at Hungard's Creek, Powley's Creek and Kilgore's Creek, \$81,394.45; undergrade crossings at Bellevue and Huntington, \$15,898.78; completing the ballasting of the Peninsula and James River Divisions, \$28,865.08; cutting out Caldwell Tunnel for a double track, \$41,715; and thirteen miles of sidings and double track, and stations at various points on the line, making a total of \$303,934.27.

The items which make up expenses for maintenance of way have been about the same in amount as last year, with the exception of the amounts for tunnels and ties, which are large this year, while there was a reduction in the expenditure for rails. The Company, however, has laid 1083 tons of 100-pound and 3200 tons of 75 pound new steel rails during the year, the cost of which, less the proceeds of old rails sold, is included in expense account. The details of the rail in the main track are given in the General Manager's statement.

The Company has been extremely liberal in its expenditures for maintenance of equipment during the past year, having expended for the maintenance of freight cars alone \$587,619.63, or over \$42 per car; on locomotives, \$341,245.94, or nearly \$1000 per locomotive; and on passenger cars, \$170,461.04, or over \$800 per car. The number of cars has been kept good, while the capacity has been increased. All of the new cars purchased or built are standard 30 ton cars, while a large number of those destroyed were old and of light capacity.

No change has been made in the policy of charging to expense account all improvements which were not a distinct addition to the earning capacity of your railroad. The only items charged to construction account during the year have been for the purchase of a small amount of land at various places along the line, the completion of the double track bridge over the Big Sandy River, the double track from Kenova to Ashland,

settlement of the contractor's claims for completing the Buckingham Branch, and sundry small matters brought over from previous years.

The details are as follows:

Cost of Road and Equipment 30th June, 1894.....	\$123,254,534.70
During the Year there has been added:	
For Completion of the Big Sandy Bridge.....	\$108,123.25
Completion of Improvements at Ashland, Ky.....	63,525.59
For Settlement of Old Claims for Damages, for Right of way and for the purchase of Real Estate on Cincinnati Division, and Ohio River Bridge, For Real Estate at Lynchburg, Va., &c.....	15,889.79
For Completion of the Buckingham Bridge.....	4,276.82
For Sundry Expenditures.....	9,600.00
	22,293.73
	318,109.18

Making Cost of Road and Equipment 30th June, 1895, as per Balance Sheet, \$123,569,643.88

There is no new work in progress upon the line, and it is not the present intention of your management to undertake any. From present indications, little, if anything, will be added to the construction account during the coming year.

The Chesapeake & Ohio Steamship Company, in which the Railway Company has a large interest, has been operated with freedom from accident during the year, but owing to the low rates prevailing for ocean freights no income has been received from the investment in its stock. The subsidy of the Steamship Company during the year, for which your Company was responsible under the contract, has been deducted from the Railway Company's earnings, the amount charged off for this purpose being \$65,914.90.

The output and distribution of coal for the last year, as compared with the previous year, has been as follows:

KIND OF COAL.	1894.	1895.
	Tons gross.	Tons gross.
Cannel.....	18,110	23,794
Gas.....	531,868	6,82,218
Splint and Block.....	511,757	519,547
New River, etc.....	1,347,875	1,981,901
Coke.....	28,453	269,861
Total.....	2,618,063	3,457,321
DISTRIBUTION OF COAL.		
Fuel for use of Company.....	393,422	471,015
Delivered Cincinnati Division of K. & M.....	671,438	930,934
Delivered on line B. S. & Lex. Divisions.....	98,474	103,028
Delivered on line C. & O. Ry., except Richmond.....	284,694	335,597
Delivered at Clifton Forge to James R. Div. for all points ex. Richmond.....	121,136	168,460
Delivered at Charlottesville to Virginia Midland Ry.....	83,555	90,950
Delivered at R. F. & P. Junction to R. F. & P. R. R.....	23,070	29,975
Delivered at Richmond for consumption, including Tugs, Dredges, etc.....	123,047	139,811
Delivered at Newport News, Norfolk, etc., for consumption.....	34,028	37,780
Shipped at Newport News wharves.....	813,753	1,236,742
Total.....	2,618,063	3,457,321

This large increase is due to the fact that there were no strikes this year and, further, that the superior quality of the coal for steaming purposes has become better known in the markets of the West.

During the year the company sold \$2,835,000 bonds theretofore in its treasury, which transaction enabled it to pay off practically its entire floating debt. Since then there have also been received bonds for betterments and equipment notes paid, so that there are today in the treasury \$49,009 of 4½ per cent. bonds, including \$177,000 received since June 30th.

The interest charges for the coming fiscal year, 1895-6 (including interest on the 4½ per cent. bonds now in treasury), stand at:

Amount of Security.	Character of Security.	Rate per cent.	Interest.
\$23,503,000	First Consolidated Mortgage Bonds.....	5	\$1,175,150
22,512,000	General Mortgage Bonds.....	4½	1,014,390
2,387,000	Purchase Money Funding Bonds.....	6	137,220
2,000,000	1908 A Bonds.....	6	120,000
2,000,000	1911 Bonds.....	6	120,000
142,000	1922 Bonds.....	6	8,520
6,000,000	R. & A. First Mortgage Bonds.....	4	240,000
1,000,000	R. & A. Second Mortgage Bonds.....	4	40,000
650,000	Craig Valley Branch First Mortgage Bonds.....	5	32,500
170,000	New River Bridge Bonds.....	6	10,200
96,200	Manchester Bonds.....	5 & 6	6,616
400,000	Warm Springs Valley R. R. Bonds.....	5	20,000
3,007,000	E. L. & B. S. R. R. Bonds.....	5	150,350
339,000	Greenbrier & New River R. R. Bonds.....	5	16,950
299,000	Buckingham R. R. Bonds.....	5	14,950
67,000	Equipment Bonds.....	6	4,020
\$64,364,200	Total.....		\$3,109,366

This shows an increase of \$11,247.80 for the coming year over the interest charges for the year just closed.

The Company has no bills payable outstanding for its own purposes, but it is liable for \$175,000 incurred for the purchase of an equal amount of the 5 per cent. bonds of the Steamship Company, which bonds, when sold, are expected to pay this liability; and it is also liable as guarantor of the Norfolk Wharf Warehouse & Terminal Company to the extent of \$100,000.

There will be no occasion for the Company to dispose of any of its securities during the coming year, except possibly in reimbursement of payments of the principal of car trusts and equipment notes recently paid or falling due during the year.

Your Directors have decided to carry in a Special Account the discount upon the bonds sold during the year, and to charge off the proportion applicable to each year during the life of the bond, deeming this course more conservative than to swell capital account with the same, as has been the general custom heretofore. The amount thus to be written off for the fiscal year just ended was \$7,132.40, which has been charged, as will be seen, to Profit and Loss Account.

During the year your Directors have completed arrangements for an extension of the line into Louisville, which is the leading commercial city of Kentucky, and one that has furnished much business to the Company. In connection with the Cleveland, Cincinnati, Chicago & St. Louis Railway Company, your Company, pursuant to authority from the stockholders, acquired, on your behalf, the Louisville & Jeffersonville Bridge Company, which owns large terminals in the city of Louisville, and a bridge over the Ohio River between that city and Jeffersonville, Indiana. To avoid building a new line from Lexington to Louisville an arrangement was made with the Louisville & Nashville Railroad for the use of its line between those two points, that company agreeing to build a cut-off, shortening the distance between the two cities to 84 miles. The liability of this Company for the use of this line and the terminals in Louisville is not likely to be over \$100,000 a year, and it is confidently expected that the income derived from the business west of Lexington (the present end of your line) will not only provide for this amount, but will leave a surplus to the Company. In addition to this, your Company is strengthened in its traffic relations by owning and controlling its own line into a city like Louisville and to a connection with the railways centering there.

There are many things which afford encouragement at the time of writing this report. Such furnaces along the line as have been closed for the last two years are resuming work; the coke ovens, which have been shut down, are all at work, and there is a distinct and positive improvement in the local business of the line, both in passenger and freight. What is known as the "through" business of the Company is not large, the earnings from the same for the past year amounting to about \$100,000 per month. This has been done, however, at a very low rate, and it is hoped that the

present movement among the Trunk Lines for advancing this rate will succeed, in which case this Company will derive its share of advantage therefrom. Still lower rates are made on what is known as "tidewater coal," and, so far, it has been impossible to make such an adjustment of this business as to get a fair rate. It is to be hoped that with the improvement in general business there will come a better understanding among the operators and the transportation companies, so that at least a fair rate may be obtained. With the general improvement of business along the line, an increase in passenger earnings may be hoped for. Such increase will practically all be gain, as it will require no increased train mileage to secure it.

Your Directors have not changed the opinion which they have expressed on previous occasions, to the effect that the low grades of your line, its physical condition, together with its advantages of cheap fuel and labor, insure it a brilliant future. That it has stood the test of the last two years and earned its fixed charges, would seem to be proof of the soundness of their opinion.

Your attention is invited to the balance sheet and other statements of the Auditor and also to the report of the General Manager, which, it is believed, give as full an account of the operations of the year and of the present condition of the Company as it is possible to submit in a report of this nature.

Thanks are due to the operating officers and employees for faithful and efficient work during the year.

By order of the Board of Directors,

M. E. INGALLS,
President.

Cincinnati, Ohio, July 30th, 1895.

PROFIT AND LOSS ACCOUNT YEAR ENDING 30TH JUNE, 1895.

Cr.	
By balance from 30th June, 1894.....	\$634,197.65
By Gross Earnings.....	\$9,596,030.61
By Less Expenses and Taxes.....	6,461,547.81
By Net Earnings from Operating.....	\$3,131,502.80
By Net Income from other sources.....	11,444.99
	\$3,142,947.79
Dr.	
To Interest Charges.....	\$3,098,118.20
To Net Rentals.....	5,913.68
To Loss on Grain Elevator.....	13,077.23
To Annual pro rata Proportion of Disc. on 4½% Bonds sold.....	7,132.40
To Total Deductions from Income.....	\$3,124,241.51
To Net Income for Year ending 30th June, 1895.....	18,706.28
Balance to Credit New Account 30th June, 1895.....	\$652,903.93

CONDENSED BALANCE SHEET JUNE 30, 1895.

Dr.	
To Cost of Road and Equipment, including Franchises and Ownership in Mays, & Big S. R. R., Cov. & Cin. Br. Co., Eliz. L. & B. S. R. R. Co., O. & B. Sandy R. R. Co., and K. & So. At. Ry. Co.....	\$123,569,641.88
Cost of Greenbrier & New River R. R.	369,000.00
Sundry Construction Accounts.....	131,973.41
Cost of C. & O. S. S. Co. Stock, 120,000.....	616,454.67
Cost of Sundry Securities in Treasury.....	\$836,549.86
C. & O. 4½ per cent. Bonds in Treasury.....	342,000.00
Discount on 4½ per cent. Bonds sold pro rata, proportion of which is chargeable annually to Profit and Loss, until maturity of Bonds.....	1,158,549.86
Special Cash Deposit to pay Coupons.....	684,712.60
Cash in hands of Treasurer.....	\$277,329.50
Materials and Supplies on hand.....	50,435.13
Amounts due from Agents and Com'rs.....	223,109.42
Current Accounts due from Ind. & Com'rs.....	417,846.37
Amounts due from Coal Agencies.....	480,757.32
	381,181.26
Kinnickinnick & Freestone R. R. Co.....	1,842,662.09
C. & O. St. Debent. (see per contra).....	14,489.59
	175,000.00
Total.....	\$128,562,486.01
Cr.	
By Capital Stock:	
First Preferred.....	\$36,100.00
Second Preferred.....	46,000.00
Common.....	60,479,700.00
	\$60,562,400.00
Funded Debt:	
5 per cent. First Consolidated Mortgage Gold Bonds.....	\$23,503,000.00
4½ per cent. General Mortgage Gold Bonds.....	22,315,000.00
6 per cent. P. M. Gold Bonds, due 1898.....	2,287,000.00
6 per cent. Gold Bonds, due 1908.....	2,014,179.17
6 per cent. Gold Bonds, due 1911.....	2,000,000.00
4 per cent. First Mortgage Gold Bonds, R. & A. Div., due 1899.....	6,000,000.00
4 per cent. Second Mortgage Gold Bonds, R. & A. Div., due 1899.....	1,000,000.00
5 per cent. First Mortgage Gtd. Gold Bonds, E. L. & B. S., due 1902.....	3,007,000.00
5 per cent. First Mortgage Gold Bonds, Craig Valley Br., due 1910.....	650,000.00
5 per cent. First Mortgage Gold Bonds, Warm Spr. Valley Br., due 1911.....	400,000.00
5 per cent. First Mortgage Buckingham R. R. Bonds, due 1912.....	260,000.00
5 per cent. First Mortgage G. & N. R. R. Bonds, due 1912.....	339,000.00
6 per cent. First Mortgage New River Bridge Bonds, due 1898.....	170,000.00
8 per cent. Manchester City Bonds.....	60,200.00
5 per cent. Manchester Improvement Bonds.....	30,000.00
6 per cent. Equipment Bonds.....	67,000.00
5 per cent. Alleghany Car Trust Certificates.....	100,000.00
Equipment Notes.....	370,900.04
	64,735,279.21
Bills payable account C. & O. Steamship Debentures (see per contra; also page 11 of pamphlet report).....	17,000.00
Unpaid Coupons, including Coupons due 1st July, 1895.....	279,697.00
Accrued Interest on Funded Debt.....	670,844.29
Aud. Vouchers due Coal Operators (see amt. due from Coal Agencies).....	461,439.29
Audited Vouchers, including June Pay-rolls payable in July.....	1,023,922.29
	2,435,902.87
Profit and Loss.....	652,903.93
Total.....	\$128,562,486.01

Richmond, Va., July 27th, 1895.

L. F. SULLIVAN,
Auditor.

COMPARATIVE STATEMENT OF EARNINGS AND EXPENSES.

Year ending June 30. *	1891.	1892.	1893.	1894.	1895.
Earnings.					
Passenger.....	\$1,765,298.81	\$2,144,909.53	\$2,360,888.71	\$2,011,977.39	\$1,847,148.04
Freight.....	5,964,516.03	7,284,386.18	7,573,651.61	6,630,201.47	7,304,815.71
Miscellaneous.....	187,241.36	197,922.61	80,337.40	64,997.37	93,507.50
Express.....	90,487.71	109,418.75	118,737.45	100,753.62	113,852.96
Mail.....	120,567.18	148,348.98	207,146.89	236,178.56	236,616.40
Newport News & Norfolk Ter.					
Total Earnings.....	\$8,127,111.09	\$9,884,416.05	\$10,349,765.06	\$9,044,108.41	\$9,596,030.61
Expenses.					
Maintenance of Way.....	\$1,429,889.14	\$1,704,769.74	\$1,439,778.29	\$1,129,695.72	\$1,195,903.22
Maintenance of Equipment.....	1,212,250.61	1,518,439.87	1,400,014.74	1,181,893.34	1,327,174.04
Conducting Transportation.....	2,436,242.53	3,046,015.90	3,939,580.74	2,577,058.17	2,784,756.14
General Expenses and Taxes.....	333,051.61	399,470.51	443,325.46	452,066.45	468,011.86
Traffic Expenses.....	191,427.58	220,113.09	226,173.47	217,755.22	230,202.77
Newport News & Norfolk Ter.....	342,087.25	357,700.12	355,172.08	292,070.75	295,984.27
Covington & Cincinnati Bidge.	138,569.46	197,669.74	182,786.99	147,185.26	161,496.52
Total Expenses.....	\$6,083,518.20	\$7,444,490.97	\$7,146,831.27	\$6,027,127.91	\$6,464,527.81
Net Earnings.....	\$2,043,592.89	\$2,439,925.08	\$3,202,933.79	\$3,016,980.50	\$3,131,502.80

Richmond, Va., July 27th, 1895.

L. F. SULLIVAN,
Auditor.

First Mortgage Five Per Cent. Fifty-Year Gold Bonds

OF THE

Georgia Southern & Florida Railway Co.

Interest Payable January and July in New York or Baltimore,
at the option of the holder.

Total Amount of Mortgage \$4,000,000, of which \$300,000
are retained in the Treasury of the Company for
future requirements, leaving \$3,700,000
Bonds outstanding.

These are \$1000 Coupon Bonds with privilege of registration of principal, and are secured by First Mortgage on the entire property of the Company; both principal and interest are payable "in gold coin of the United States of America, of the present standard of weight and fineness," and "without any deduction for National, State or Municipal Taxes."

A controlling interest in the road has recently been purchased by the Southern Railway Company, and it will be run in connection with that system, which it joins at Macon, Georgia, extending to Palatka, Florida, a distance of 285 miles of main line with ample side tracks.

It owns large and valuable terminal properties at both Macon and Palatka, besides about one mile of frontage on the St. Johns River. These terminals are estimated to be worth fully \$500,000.

The roadbed is in good condition and is laid with 60-lb. steel rail. The road is well equipped, comparing favorably in that respect with the Plant System, Seaboard Air Line and Atlantic Coast Line.

The traffic of the road is diversified and is steadily increasing. The earnings for the year ending June 30th, 1895, were:

Gross Earnings (\$2958 per mile).....	\$843,560
Operating Expenses.....	614,995
Net Earnings.....	228,565
Interest on \$3,700,000 outstanding Bonds.....	185,000
Surplus over fixed charges.....	\$43,565

These earnings were made before the road became a part of the Southern System, and almost entirely from local business, and in a year of not unusual prosperity.

The earnings for 1893 and 1894 were \$817,322 and \$831,052 respectively.

The connection with the Southern Railway System will be of great advantage, as it will enable the Georgia Southern & Florida to handle a large through business heretofore thrown over other lines, thus enlarging its traffic and increasing its earnings.

The following table, taken from the latest comparative reports obtainable, is interesting as comparing the First Mortgage Bonds of the Georgia Southern & Florida with those of the Columbia & Greenville, Georgia Pacific and Western North Carolina, which are similarly situated with regard to the Southern Railway, all being controlled and operated as parts of the Southern Railway System:

	Sales Aug. 1895.	Maturing.	Bonds Per Mile.	Earnings Per Mile. 1894.
Columbia & Greenville Firsts.....	113	20½ Years.	\$12,200	\$2468
Georgia Pacific Firsts.....	114	26½ "	10,000	3269
Western North Carolina Firsts.....	115	19 "	12,500	2913
Georgia Southern & Florida.....		50 "	13,000	2868

The undersigned offer at par and accrued interest, subject to sale or advance in price, 1,200,000 of the above-described bonds of the Georgia Southern & Florida Railway Company, and confidently recommend them to investors.

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1 20x8 Sellers Lathe.
1 20x10 Harris Lathe.
1 20x12 Muller Lathe.
1 20x14 Sellers Lathe.
1 22x10 Niles Lathe.
1 24x16 Sellers Lathe.
1 24x18 Leonard Lathe.
1 26x13 Gleason Lathe.
1 26x20 Pond Lathe.
1 30x22 Pond Lathe.
1 30x28 Sellers Lathe.
1 34x14 Steptoe Lathe.
1 38x22 Lodge & Davis Lathe.
1 42x24 Putnam Lathe.
1 44x20 Sellers Lathe.
1 52x24 New Haven Lathe.

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1 16x16x3 Pratt & Whitney Planer.
1 24x24x6 Bancroft Planer.
1 24x24x7 New Haven Planer.
1 25x25x0 Bancroft Planer.
1 30x30x7 Sellers Planer.
1 30x30x10 Bement Miles Planer.
1 32x32x6 Lathe & Morse Planer.
1 34x34x7 New Haven Planer.
1 36x36x8 Niles Planer.

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1 5 ft. Niles Plain Radial Drill.
1 5 ft. Cincinnati Radial Drill.
1 20 in. Lodge & Davis Sliding Head Drill.
1 20 in. Prentice Drill.
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1 8 in. Crank Shaper.
1 15 in. Traveling Head Shaper.
1 16 in. Lodge & Davis Shaper.
1 20 in. Lodge & Davis Crank Shaper.
1 24 in. Hendev Shaper.
1 26 in. Lodge & Davis Geared Shaper.

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1 8 ft. Greenwood Boring Mill.
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Engine Lathes 14 to 40 in. swing.
Planers 24 to 54 in. wide.
Drill Press 12 to 42 in. swing.
Radial Drills 3, 4, 5 and 6 ft. arms.
Shapers 14, 16, 21 and 26 in. stroke.
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Iron Brokers,

Dealers in all kinds of Old Iron and Metals, also Second-hand Machinery.

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One Iron Planer, 5 ft. 26x24 in., New Haven.
and various other sizes.
One Engine Lathe, 26 in. x 10 ft. D. W. Pond.
One Engine Lathe, 15 in. x 6 ft. " "
One L. W. Pond Lathe, 18 ft. x 53 in. swing.
One Putnam Lathe, 14 ft. x 30 in. swing.
One 18 ft. Pit Lathe.
and various other sizes.
One 28-in. B. G. Self-feed New Haven Drill.
One 36 in. Back Geared Self-feed Drill.
One 1200-lb. Steam Hammer.
One 1000-lb. Steam Hammer.
One 350-lb. Steam Hammer.
One Double Alligator Shears.
Send for list of tools.

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Engine Lathes. Planers.
15 in. x 6 ft. 24 in. x 5 ft.
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22 in. x 12 ft. 36 in. x 14 ft.
24 in. x 12 ft. 60 in. x 10 ft., 2 x rails.
26 in. x 20 ft. 12 in. stroke Shaper.
29 in. x 13 ft. 19, 36 and 50 in. Drills.
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37 in. x 30 ft. 2 in. Bolt Cutter.
50 in. x 20 ft. 80 lb. Bradley Hammer.
21 in. x 20 ft. 1000-lb. Steam " F. & M.
Boiler Rolls, 6 ft. Punch & Shear, double.
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Vertical Foring and Turning Mill, Gear Cutter,
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33 in. x 18 ft. D. W. Pond Engine Lathe, C. Rest and P. C. Feed. A heavy massive tool in good order.
Three 29 in. x 17 ft. New Haven Engine Lathe, Philadelphia Gib Rest. Complete with all attachments.
36 in. x 25 ft. J. K. Smith Shafting Lathe.
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144 in. x 35 ft. Gas Engine Lathe.

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Prentiss Tool & Supply Co.

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FOR Immediate Delivery.

20 in. swing, with	6, 10 and 12 ft. bed.
22 " " "	8, 10 " 14 " "
26 " " "	16, 20 " 26 " "
30 " " "	14, 18 " 24 " "
40 " " "	16, 22 " 27 " "
50 " " "	18 and 28 " "

One of each size.

Send for cuts and prices.

We have in stock constantly, all parts of lathes from 17 to 64 inch swing, except beds, so that we are prepared to furnish at short notice anything desired.

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One 60-bushel Howes Corn Sheller.
One 25-h.p. Engine and Boiler.

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All in first-class condition.

A great bargain for some one.

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SUBURBAN LOCOMOTIVES AND MOTORS.

We are having shipped to our works an unusually fine lot of standard gauge engines taken from the service of a road which has just changed its power from steam to electricity. They are in condition for immediate service and can be sold at low figures. Photographs and full description on application. Also steam and street railway equipment of all kinds for sale.

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12-ton Porter, 36 in. gauge Locomotive.
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Standard gauge Passenger Steam Dummy Car, Baldwin build. Also large assortment of Steam Pumps, Engines, Boilers etc., at low prices for cash. Lot of cheap 6 and 8 H. P. Upright Engines. Carter Ore Washing Plant.
18-in., 12-in., 24 in. Mine Pump.
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100, 80, 70, 60 H. P. Locomotive Boilers.
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800 tons of 30-lb. Steel T Rails, in first class relaying condition, and plates to match.

Write us for prices and terms.

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One Dummy Engine 12x16 in. cylinders, standard gauge, overhauled and ready for service. Atlanta inspection.

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One Standard Gauge Dummy Engine, Baldwin make, class 4-18 C. Cylinders 12x16. Diameter of driving-wheels 35 inches. Weight 33,000 pounds. Also

Three Closed and One Open Passenger Coach, all in good condition. Also 400 tons 46-lb. Steel Relaying Rails with splices, at Nashville, Tenn. Also

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Two Standard Gauge Baldwin Locomotives, saddle tanks.
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Seven Open Standard Gauge Excursion Cars.

MANHATTAN EQUIPMENT CO., 115 Broadway,
New York.

Port Royal & Western Carolina Railway.

MASTER'S SALE.

Pursuant to a final decree of the Circuit Court of the United States for the District of South Carolina, filed August 1, 1895, in certain causes in equity pending in said court, wherein Charles H. Phinizy and Alfred Baker, trustees, are complainants, and the Augusta & Knoxville Railroad Co. and others are defendants, and wherein the Central Trust Co. is complainant and the Port Royal & Western Carolina Railway Co. is defendant, the undersigned special master, appointed in said decree, will, at 12 o'clock noon, by railroad time, on the 17th day of October, 1895, sell for cash, at public auction, to the highest bidder at the Port Royal & Western Carolina passenger station on its premises in the city of Greenwood, in the State of South Carolina, the property and franchises of the Augusta & Knoxville Railroad Co. and of the Port Royal & Western Carolina Railway Co., mentioned in said decree, and therein ordered to be sold, the same being more particularly described as follows:

First.—All and singular the lands, tenements and hereditaments formerly of the Augusta & Knoxville Railroad Co., wherever situate, whether in South Carolina or in Georgia, including all of its railways, tracks, rights of way, main lines, superstructures, depots, depot grounds, station-houses, sheds, watering-places, workshops, fixtures, machine shops, wood houses, bridges, viaducts, culverts, fences, machinery, material, engines, tenders, cars, tools, contracts, choses in action, rails, tolls, rents, incomes, franchises, privileges, rights, and all other property, real and personal, or mixed, to it belonging or in anywise appertaining to said railroad company, upon its line between Augusta, Ga., and Greenwood, S. C.

Second.—All the railways of the Port Royal & Western Carolina Railway Co. (excluding the line from Augusta, Ga., to Greenwood, S. C., formerly owned by the Augusta & Knoxville Railroad Co.) to wit, from McCormack to Anderson, both in South Carolina, traversing the counties of Abbeville and Anderson for a distance of fifty-eight and a-half miles, more or less; from Laurens to Greenville, both in South Carolina, traversing the counties of Laurens and Greenville for a distance of thirty-six and a-half miles, more or less; and from Greenwood to Spartanburg, traversing the counties of Abbeville, Laurens and Spartanburg for a distance of sixty-six miles, more or less; and all its railroads now built and its rights of way, roadbeds, superstructures, iron, ties, splices, chairs, bolts, butts and spikes and all the lands and depot grounds, station-houses and depots, viaducts, bridges, timber, materials and property purchased or built for the construction or operation of said railroad; all machine shops, implements, tools and personal property used or upon or along the line of said road or at its stations; all engines, tenders, cars and machinery and all kinds of rolling stock owned by said company, and all other properties of said company and all its rights and privileges therein or appertaining thereto, and all the revenues, tolls and incomes of said railway company, and all property and rights acquired by virtue and under authority thereof, and the improvements, buildings, easements, rights, members, heredita-

ments and appurtenances to the same belonging or in anywise appertaining.

The said property will be sold in the following order:

First.—The property hereinbefore described as the property of the Augusta & Knoxville Railroad Co.

Second.—The property hereinbefore described as the property of the Port Royal & Western Carolina Railway Co. (excluding the Augusta & Knoxville Railroad Company).

Third.—The entire property as one system.

The said sale will be made upon the further terms as follows: The Special Master will receive no bid at the sale of said Augusta & Knoxville Railroad for less than \$850,000; nor a bid at the sale of the Port Royal & Western Carolina, (excluding the Augusta & Knoxville Railroad), for less than \$1,800,000; nor a bid at the sale of the entire system for less than \$2,650,000. The Special Master will not receive any bid from anyone offering to bid at any of the said sales, who shall not first deposit, for the purpose of bidding at such sale with him as a pledge that such bidder will make good his bid in case of its acceptance, the sum of \$50,000 in money or by check certified by some responsible bank; the deposit to be made separately at each sale. The deposit so received from any unsuccessful bidder shall be returned to him when the property shall be struck down and the deposit so received from the successful bidder shall be applied on account of the purchase price. Such further payment on the purchase price shall be made in cash after the confirmation of the sale or sales as the Court in said cause may from time to time direct, and the Court reserves the right to resell the property and premises upon the failure of the purchaser or purchasers or their successors or assigns to comply within twenty days with any order of the Court in that regard, and any defaulting bidder or purchaser who shall default, shall be liable to the extent of the deposit so made by him to make good any and all expenses and any and all deficiency or loss occasioned by the property bringing a less price at any such resale, and the amount so deposited by such bidder shall be applied accordingly; provided, however, that the purchaser may turn in to the Special Master in lieu of cash, after first paying into Court in cash, such amounts as may be adjudged by the Court as the costs, expenses, compensation and solicitor's fees in the litigation, any bonds of the Augusta & Knoxville Railway Co., and of the Port Royal & Western Carolina Railway Co., the same to be received and the bidder to be credited therefor on account of the purchase price to an amount equal to the distributive amount of the proceeds of sale, payable as in said decree provided on said bonds and coupons of the Augusta & Knoxville Railroad Co. and of the Port Royal & Western Carolina Railway Co.

Should at either of the sales of the property hereinbefore described there be no bid equal to the minimum upset price of the same the Special Master will report the same to the court, and should, at the last sale of the entire property as one system, any bidder did not less than the amount of the minimum upset price to be received for the same then said entire property shall be knocked down to such bidder, or the highest bidder thereafter, and the bid, if any made, for pieces of property before sold separately, shall not be considered; but if at such sale of the entire property as one system no bidder shall bid the amount of the minimum upset price hereinbefore mentioned, then the bids before made for the separate parts of the property, if such bids be equal to the minimum upset prices hereinbefore authorized to be received, will be duly reported to the court as the sales of the property for its confirmation.

The purchaser or purchasers at said sale shall, as part of the consideration and purchase price of the property purchased, take the property upon the expressed condition that he or they or their successors or assigns will pay, satisfy and discharge any unpaid compensation allowed to John B. Cleveland as receiver, the taxes for the fiscal years 1890 and 1891, now in litigation, if the same be found to be a charge on said Port Royal & Western Carolina Railway Co., and all contracts made and obligations incurred by the said John B. Cleveland as receiver under order of this court or with its approval, or which may be contracted or incurred by him under said authority prior to the delivery of the possession of the property sold to the purchaser or purchasers and which shall not have been paid by the receiver prior to such delivery of possession out of the income of the said property, such obligation so assumed when duly established, to remain and constitute a first lien on the property so sold, in the hands of the purchaser or purchasers until fully paid and discharged, but the purchaser or purchasers of the Augusta & Knoxville Railroad portion of the system shall

only assume and be liable for the same to the extent the mileage of said portion bears to the entire system.

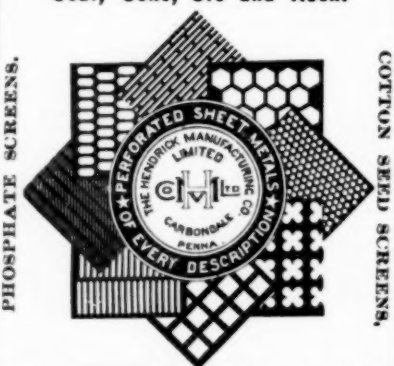
For all further particulars of the terms and conditions of sale and of the property hereby advertised for sale, reference is made to said final Decree now on file in the United States Circuit Court for the District of South Carolina, at Charleston, S. C.

THEODORE G. BARKER,
September 2, 1895. Special Master.

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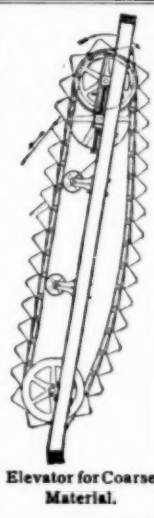


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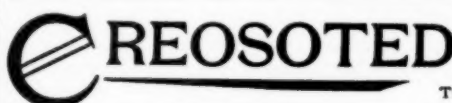
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